NORTHEAST MARKETING ISSUE
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$1 Million Allocated By U.S. for Control Of Grasshopper Pests

WASHINGTON—About $1 million in federal funds has been made available to help stop the outbreak of migratory grasshoppers in Colorado, Kansas, Oklahoma, New Mexico and Texas, the U.S. Department of Agriculture has announced.

This represents USDA's one-third share of the cost of spraying some 5 million acres of the most heavily infested land in 46 counties in the 5-state outbreak area. Plans are being made now to bring additional counties into the program.

USDA's Agricultural Research Service has also provided 44 high-power ground spray machines for use in the area. These mist-blower machines, mounted on trucks, are doing much of the roadside spraying.

Trained USDA supervisory personnel, assisting state and county grasshopper-control workers in the area, now number 42. Twenty-five of these supervisors were moved in from other areas to help organize and conduct the control program.

About 80% of the total acreage now under treatment in this cooperative effort is rangeland. The rangeland work and the treatment of roadsides and idle and wasteland will protect millions of acres of cultivated crops.

A total of 50 specially equipped aircraft, operated by four main contractors, are spraying the ranges and some of the roadsides, idle and wasteland. These aircraft include single-, twin-, and four-engine types. They carry 180 to more than 2,000 gallons of insecticide spray mixture per flight. More aircraft are on the way to further step up the rate of spraying.

USDA grasshopper-control specialists now believe that extensive damage to crops and ranges from the present outbreak can be avoided. So far crop injury has been minor. Much of the wheat previously threatened in some areas has been harvested.

The winter wheat crop in Oklahoma and Texas was largely harvested before any significant grasshopper damage could occur. The wheat crop in Kansas is maturing rapidly and it appears the grasshopper control program that is well along in this state will preclude serious damage to the crop. Some damage is reported in the margins of wheat fields in Colorado, and row crops show some injury in Colorado, Oklahoma and Texas. So far, however, crop damage throughout the 5-state area is not

(Turn to GRASSHOPPERS, page 20)

3% Excise Tax on Freight Movements To End on Aug. 1

WASHINGTON — Congress has ended the 3% excise tax on freight movements of all property by all forms of transportation, effective Aug. 1, 1958. The tax measure to which this repealer was an amendment was signed by the President, and following that signature the Internal Revenue Service issued the following announcement:

"The excise taxes on amounts paid for transportation of freight, coal and oil by pipelines are repealed, effective with respect to amounts paid on or after Aug. 1, 1958. This means no tax is payable on amounts paid after July 31, 1958, regardless of the fact that the transportation commenced before, on or after that date."

Insect Control Activity Stepped Up All Over U.S.

Corn Borers Continue to Develop in Midwest

AMES, IOWA — Continued cool weather has delayed corn borer development. (June 28) Moths are still present in oats and tall weeds and egg masses can be found on corn. A year ago the situation was similar.

Corn height (tallest fields) in the central ⅓: ranges from 40 to 70 inches. Leaf feeding ranges from 28% on 36" corn to 96% on 40-50" corn. This corn has 2 to 8 first instar borers per infested plant (av. 5) and 10 to 36 unhatched egg masses per 100 plants.

East of Marshalltown, only 10 to 15% of corn appears to be 40 inches or taller. This 40-50 inch corn has 8 to 40% leaf feeding (av. 26%), has 0 to 40 unhatched egg masses per 100 plants (av. 15) and has 1 to 9 1st instar larvae per plant (av. 6).

Corn height (tallest fields) in the Northern ⅓ ranges from 30 to 40 inches. Leaf feeding ranges from 0 to 80% (av. 36%). There are 6 1st instar larvae per infested plant (range 2 to 10) and 0-40 unhatched egg masses per 100 plants (av. 20).

Corn root aphids are working in 1 field in Butler County. These aphids are put on corn roots by ants, suck sap from the roots and cause corn to yellow. Chemical control must be applied before or at planting time.

Corn leaf aphids are showing up on corn in central Iowa, but they are few in number. These insects were reported in Taylor County on grain sorghum by a number of farmers.

(Turn to INSECT NOTES, page 4)

Reclamation of Tidal Basins May Solve Cropland Shortages

WASHINGTON — Reclamation of submerged lands may help overcome shortages of cropland near large metropolitan areas, according to a U.S. Department of Agriculture engineer.

Land shortages caused by a steadily increasing population and urban expansion were discussed at the 51st annual meeting of the American Society of Agricultural Engineers at Santa Barbara, Cal.

V. S. Aronovici of USDA's Agricultural Research Service at Pomona, Cal., told ASAE members that hundreds of thousands of acres of submerged lands border the coastline of the United States from New Jersey to Texas. There are also reclaimable swamplands in other areas.

In the West, he said, there are areas such as San Francisco Bay, with fully 159,000 acres of tidal flats and shallows, which are now under study for reclamation possibilities.

He indicated the problems confronting reclamation projects for such lands are not likely to be greater than those encountered by the Dutch, whose agricultural economy has been based for centuries on development of submerged lands for agricultural use.

Soil acidity and fertility, and potential soil structure, surface and internal drainage must be predetermined before reclamation can be justified, Mr. Aronovici said. Forecasts must also be made of the possible effect on these sedimentary soils of drastic changes in their environment caused by reclamation.

Report Puts U.S. Nitrogen Use at 2,900,000 Tons

Aikman Says Agricultural Consumption Accounts for 2 Million Tons of Total

LONDON—Nitrogen sales in the U.S. for 1957-58 are estimated at 2,000,000 tons for agriculture and about 900,000 tons for industrial purposes by the half-yearly report of Aikman (London) Ltd.

Aikman said that since its previous report last November "the world nitrogen market shows considerable improvement. Production has been less than estimated because of the U.S. steel production falling at one time to 45% of capacity and a certain curtailment of other production when it appeared that the expected increase in consumption might not materialize."

On the other hand, the report stated, consumption has shown an increase and as a result, apart from American ammonium nitrate and liquid fertilizers, stocks are normal and there is no surplus on the world market.

"This indicates that present production does not essentially exceed requirements and the European nitrogen producers will enter the new fertilizer year without stocks of any importance, and this probably applies also to producers in the U.S.," the report stated.

"The price of nitrogen fertilizers a few months ago reached a low international level, but it would appear probable that prices will now become slightly firmer for new transactions.

"Consumption in the U.S. has proved less than expected, largely owing to the very wet weather in the early spring which resulted in delayed purchases, and although conditions during the last two months have been much better it seems doubtful whether the lost ground can be entirely made up."

Aikman said that the cheap sales made by Europeans during the last six months have not affected prices in the U.S., which have held firm.

(Turn to AIKMAN, page 20)

Spencer Closes Vicksburg Plant for Month

VICKSBURG, MISS. — The nitrogen plant of Spencer Chemical Co. here has been shut down temporarily in order to make inventory adjustments, according to W. A. Johnston, works manager of the plant. Production at the 200-ton-a-day facility stopped at midnight, June 21, but it is emphasized by the company that normal shipments from Vicksburg will continue to be made to customers who operate in the area.

"The reason for the shutdown," Mr. Johnston said, "is to adjust excessive nitrogen inventories. It is the first time in four years of operation that this has been necessary," he explained.

The plant went on stream in February, 1954. It employs a force of 160, 69 of which have been laid off for an estimated month.

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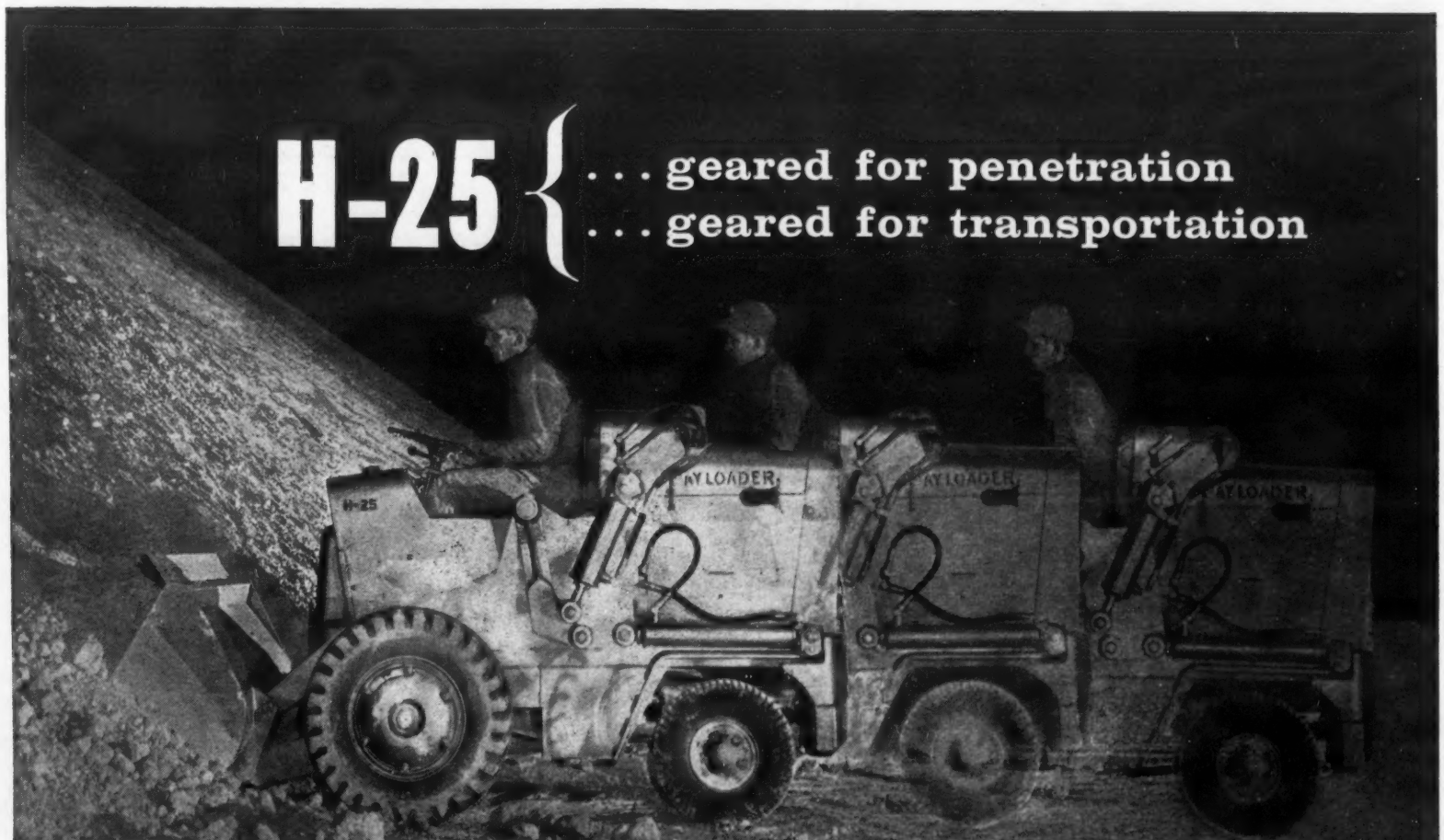

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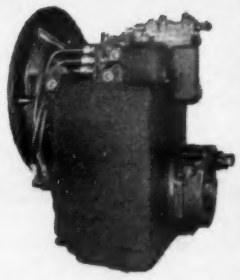

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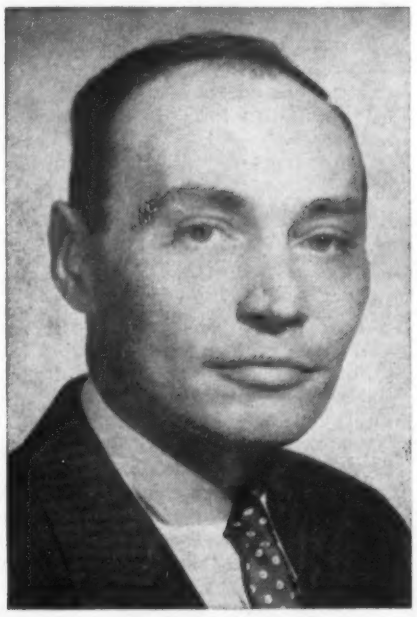


W. Scott James

CHEMAGRO APPOINTMENT — W. Scott James has been appointed advertising manager of Chemagro Corp., Kansas City, manufacturers of agricultural chemicals. He will continue to serve as eastern regional manager of Chemagro, with headquarters in New York City. Mr. James was sales manager of the agricultural chemicals division of Pittsburgh Coke & Chemical Co., Pittsburgh, Pa. before joining Chemagro in 1955. He is a graduate of the University of Maryland, with a degree in entomology.

Freeport Building Offshore Sulphur Plant

NEW ORLEANS—An offshore sulphur mining plant is beginning to take shape with the erection of the first steel towers seven miles off the coast of Louisiana in the Gulf of Mexico.

When completed, the Y-shaped island will stretch for nearly one mile and reach 60 feet above the water. The structure, believed to be the largest steel island in the world, is the principal part of a $30,000,000 project undertaken by Freeport Sulphur Co. to develop a major new sulphur deposit known as Grand Isle.

Five large and ten smaller steel-pile towers, connected by 200-ft. long bridge spans, will form the structure. This will support the complex and heavy facilities required by the Frasch process whereby sulphur is melted in the underground formation by superheated water and brought to the surface in molten form.

The large towers will support the major installations—the seawater heating plant, three drilling platforms and the living quarters and recreational area. A total of 250 men will work five-day-on, five-day-off shifts and will be transported to and from the island by company helicopters.

Agricultural Engineers See Aircraft Display

SANTA BARBARA, CAL.—"Agricultural aviation is an accepted practice and a real necessity in the state of California," Wesley E. Yates, in charge of University of California department of agricultural engineering at Davis, told the members of the 51st annual meeting of the American Society of Agricultural Engineers.

Mr. Yates conducted the ASAE tour through the agricultural aircraft display at the Santa Barbara Airport. He described the different types of aircraft and equipment used, and the value of the crop dusting industry to the California farmer. Typical aircraft and equipment were on display, as well as the newest designs to be certificated.

Wanda Branstetter, executive secretary of the Agricultural Aircraft Assn., arranged the aircraft display. The association is composed of the crop dusting operators of California.

Roy L. Brandenburger Named Senior Monsanto West Coast Representative

ST. LOUIS—Roy L. Brandenburger of St. Louis, Monsanto Chemical Co. vice president, has been appointed senior representative on the West Coast, it has been announced by Charles Allen Thomas, Monsanto president. He will be located at Santa Clara, Cal., starting July 1.

Mr. Brandenburger is the former general manager of the company's Consumer Products Division. In his new assignment he will render advice and assistance to the marketing and operating personnel in the various Monsanto divisions located in the western states.

Mr. Brandenburger's executive responsibilities encompass an 11-state area. Monsanto maintains five plants in three of these states—at Seattle, Wash., at Soda Springs, Idaho, and at Avon, Santa Clara and Long Beach, Cal. The company also has sales offices in Los Angeles, San Francisco and Seattle.

A native of St. Louis, Mr. Brandenburger holds a B.S. degree in business administration from Washington University (1933). He joined Monsanto as general manager of the company's Consumer Products Division in 1952.

Harris Purchases Lexington Laboratories

LINCOLN, NEB.—Harris Laboratories, Inc., Lincoln, Neb., has purchased the Lexington Laboratories, Lexington, Neb., an independent soil, feed and agricultural laboratory, and will continue to operate it at Lexington. Paul E. Nickel will continue to act as general manager. Plans are developing to expand the facilities and services.

Lewis E. Harris, president of Harris Laboratories, Inc., said that a new Lexington location with more than double the present space had been leased. New electronic and automatic equipment will be installed at Lexington Laboratories during this summer, and facilities will be available to handle over 80,000 soil samples per year, in addition to increased volumes of dehydrated alfalfa and feed samples, Mr. Harris said. Research and product development services will be available to carry out projects on soil fertility, uses of trace elements, new fertilizers, pesticides and herbicides, he said.

Sole Names Technical Sales Representative

CHICAGO—Sole Chemical Corp., Chicago, producer of surfactant specialties, announces the appointment of the H. D. Thornley Co., Wilmington, Del., as its technical sales representative for the eastern half of Pennsylvania, Delaware, Maryland, District of Columbia, Virginia, West Virginia, and the south and west portions of New Jersey.

The Thornley organization will market the Sole chemical line in the food, cosmetic, pharmacal, industrial, agricultural, paint, sanitation and other industries. The H. D. Thornley Co., with headquarters at 901 Liftwood Road, Wilmington, also has an office in Philadelphia.

RODENT CONTROL FILMSTRIP

NEW YORK—Through United World Films, distributors of U.S. Government films, the U.S. Public Health Service has released for public use a new 76 frame, 35mm color filmstrip and 16 inch 33⅓ R.P.M. disc to play ten minutes entitled, "Use of Anticoagulants in Rodent Control." Inquiries regarding the use of this new sound filmstrip should be addressed to the authorized distributor, United World Films, Inc. (Government Dept.) 1445 Park Ave., New York 29, N.Y.

Pasture Spraying Under Way in Canada

WINNIPEG, MAN., CANADA—Pastureland became the center of attention recently when aircraft began a spraying operation over 2,000 acres of pastures in the Interlake area.

Conducted by the provincial agriculture department's soils and crops branch, the program is one of a series of steps to improve pasture conditions in the province. The Interlake operations are carefully controlled to avoid spray drifting, which means 4 a.m. take-offs on suitable mornings. Six areas are involved around Lake Francis, Gunton, Inwood, Chatfield, Lundar and Mulvihill.

The 2,4-D is being used to rid pastureland of willow growth and scrub poplar, and is the first time the province has undertaken this work on pastureland.

Agriculture minister Hon. C. L. Shuttleworth said other pasture work involved: Grazing trials near Gladstone, where cattle are tested on fertilized and non-fertilized pastureland. The cattle are weighed in and out, and an assessment is to be made of the pounds of beef produced per acre for each type of pasture.

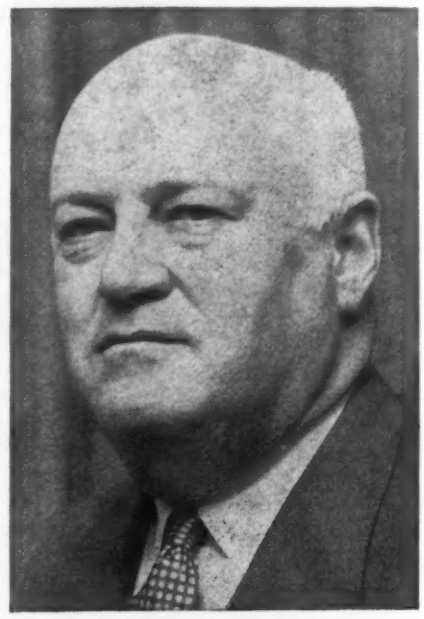
Continuation of work with pasture improvement clubs. These clubs, in the Steinbach, La Broquerie and St. Pierre areas of the Greater Winnipeg Milk Shed have been operating for about three years and there has been a "noticeable improvement" in pastureland. Carrying capacity has been doubled through rotational grazing, controlled grazing and fertilizers.

Stepped-up community pasture work. The province itself has two community pastures, one at Sleeve Lake near Mulvihill, at which corrals and fences were completed last year, and a second at Birch River. Within the so-called "agriculture area," it has two pastures at St. Lazare, one near Neepawa, two at Westbourne-Lakeview, two at Portage la Prairie-Woodlands, and two others under construction near McCreary and San Clara north of Roblin.

Mr. Parker said the pasture and hay situation is serious this year, with many cattlemen still using last year's hay.

LOCUST PLAGUE

HONG KONG—The Peiping Radio said recently that a million Chinese in Shantung Province have been fighting day and night against the biggest locust plague since 1949. The broadcast said that 1,371,000 acres of farm land had been attacked.



Edward Block

Edward Block to Head New Olin Mathieson Chemical Division

NEW YORK—Olin Mathieson Chemical Corp. has announced the completion of its integration program which consolidates the company's operating units into seven industrial divisions. Eleven former divisions have been integrated into four new divisions while the Squibb, Winchester-Western and International divisions continue their present organization structure.

The four new divisions and the vice presidents appointed to head them are: chemicals—Edward Block; metals—Jess E. Williams; packaging—Robert H. Evans; and energy—Carroll Copps.

As head of the new chemicals division, Mr. Block will be in charge of industrial, organic, agricultural and phosphate chemicals operations, formerly independent divisions. He has been vice president in charge of Olin Mathieson's agricultural and phosphate chemicals divisions.

PEST CONTROL POST

FOLEY, ALA. — Culbert Mack Shotts is scheduled to take over the Foley plant pest control office, Federal Agricultural Research Service. William Zimmer, who has been with the local office for the past three years, will go to Mobile where he will take charge of plant pest operations.

OUTSTANDING AGRONOMY STUDENT—James W. Hendrix (right) was selected as the outstanding student at North Carolina State College of Agriculture to receive the 1958 "National Plant Food Institute Agronomy Achievement Award." The selection was made by a faculty committee of the college and is based on academic achievement, extra-curricular activities, and the promise which the recipient shows for future contributions to the field of agriculture. The award consists of a plaque inscribed with the name of the student so honored, an engraved key, and a cash prize of $200. The presentation was made recently by Dr. Samuel L. Tisdale (left), Southeastern regional director of the Institute, at the annual Agronomy Club banquet.

INSECT AND PLANT DISEASE NOTES

(Continued from page 1)

We have no evidence that these aphids cause any loss in yield in grain sorghum. They build up rapidly, and so far have disappeared just as rapidly without chemical treatment. —Harold Gunderson.

Insect Activity Gets Under Way in Missouri

COLUMBIA, MO. — Cool weather during the past week (June 28) slowed up borer development somewhat, and has consequently extended slightly the period during which insecticides can profitably be used in many fields. As near as we can see it, the situation is as follows:

South of Highway 36, borers are rapidly entering the stalks of earlier corn. We believe it is getting too late for good results to be expected from using insecticides in these fields. In later corn—those fields in which the plants still measure only about 40 inches or so in extended height—since the eggs were laid considerably later, the borers are consequently smaller, and few are going in the stalks yet.

We have seen some fields in the northern sections which were treated too early. In each instance, timing of the insecticide application was based on egg counts, not leaf feeding scars.

It should be emphasized, however, that no second application is recommended for those fields in which the insecticide was applied at the proper time.

Webworm injury to alfalfa is increasing in most areas, and it can be expected to get worse in many fields.

As has been pointed out before, the best bet is to cut the hay a little early rather than using any sort of spray—if this can be done. In some instances, the alfalfa is too short to cut, and spraying is in order.

In the central and northern sections of the state, we are still having some trouble with grape colaspis taking out spots in stands of corn, soybeans, and sorghum. Infestations are always worse in fields which were in lespedeza last year. Little can be done at this time in the way of control. A soil insecticide as recommended for corn land will always stop this injury, but it must be used before, or as, the crop is planted.—Stirling Kyd and Geo. W. Thomas.

Dutch Elm Disease Reported on Increase

MADISON, WIS.—Since June 16, 1958, the total number of Dutch elm disease cases has risen from 19 to 122 trees, the majority being in the Beloit area. In this period Ozaukee county has been added to the list of counties having this tree disease. At the present time, the smaller European elm bark beetle the principal vector of this disease is found in 24 counties.

Lecanium scale "crawlers" were observed on Dane county ornamental, elm and fruit trees. Chemical control for the heavy scale populations observed in Dane, Sauk, Washington and Milwaukee (not necessarily limited to these counties) should have begun about June 30. Scale populations are the highest they have been in the past decade.

European corn borers have begun to hatch in Grant, Crawford and Rock counties. Light infestations were observed on advanced field corn and early market sweet corn. Corn borer egg masses ranged in development from the white-head to the black-head stage with approximately 40% of the total egg masses hatched.

On June 21, European corn borer egg masses and 1st instar larvae were observed on Grant and Crawford county field corn where the plant's extended height ranged between 2½ and 3 feet. This infestation did not exceed 8% of the plants in the observed fields. Egg masses and larvae were found in Rock county on June 23. From these limited observations, it appears that the peak of the 1st brood egg laying period is past for this area, but the recent cool evenings and adverse moth flying weather may have prevented egg deposition.

If these observations give a correct indication of what is present, the first brood infestation will be light. Also, the observed fields were the most advanced corn plantings in the area and newly hatched corn borer larvae find it difficult to survive on corn plants less mature. Examination of sweet and field corn in Dane, Columbia and Dodge counties failed to reveal any egg masses.

Pea aphid counts ranged from a low of 15 per sweep to a high of 200 with an average of 50 in Brown county. Similar counts were taken in Calumet, Kewaunee, Manitowoc and Outagamie counties. One canning company in this area has treated all its early and late pea acreage. Pan counts averaging from 60 to 35 aphids per pan were observed in Columbia county. Dodge county peas had an average of 15 aphids per sweep while averages in Rock and Jefferson were lower.

Although English grain aphid was the most common aphid on small grains, it has failed to build up large populations on the University Hill Farms. Corn leaf aphid populations, on the other hand, have increased but are not generally present on barley. Apple grain aphid, rose grass aphid, and the quack grass aphid are also present on barley. One greenbug was found on oats in southern Wisconsin. Considerable numbers of bean aphids and cowpea aphids have been trapped, also a few green peach aphids, pea aphids and potato aphids. English grain aphid populations in small grain appear to be diminishing in Dodge county and most likely are doing so in other counties.

Crop Pests Reported Doing Damage in New Mexico

STATE COLLEGE, N.M.—Stink bugs were in light to heavy infestations in barley and oats throughout Dona Ana County by the end of June.

Corn earworm was doing considerable damage to corn in most areas of the state.

Large populations of thrips damaging young alfalfa in Dona Ana County.

Heavy infestations of spotted alfalfa aphid doing considerable damage to alfalfa in Hagerman-Dexter area, Chaves County and Garfield, Dona Ana County, and Lygus bugs were causing considerable damage to seed alfalfa. Both adults and nymphs very numerous.

Three-cornered alfalfa hopper averaged about 3 or 4 per 10 sweeps in alfalfa fields in Dona Ana County.

About 100,000 acres, mostly rangeland, under contract to be sprayed in Union County for grasshopper control.

The spotted cucumber beetle was damaging chili plants in Dona Ana County, and fleabeetles were damaging chili and potatoes in several fields in Dona Ana County. There is a considerable buildup of Lygus bugs in cotton fields in southern counties.

Fleahoppers averaged 37 per 100 sweeps in cotton in East Grand Plains and Roswell areas. Black fleahopper also building up in cotton fields in southern counties.

Modern infestations of bollworm on cotton near Roswell, 22% of terminal buds damaged in one field. Live worms found in both buds and squares. Generally light infestations in cotton fields in southern counties.

QUADRUPESTS

BATESVILLE, TEXAS—Cotton pests are getting bigger in parts of south Texas. Recently this area was overrun by an invasion of rats, which ate green bolls from the lower branches of cotton plants. They also stripped leaves that were within reach. Observers say the invasion covers a wide area and is the worst they have ever seen.

Texas Cotton Hit by Variety of Insects

STANTON, TEXAS—Insect infestations of almost every known kind have been observed in West Texas cotton fields, but nowhere have they caused serious damage. Part of this has been caused by changing weather and partly because farmers have done a good job of early season control. Early fleahopper infestations were held down, while grasshopper threats were kept in check by using poison bait and spraying.

The newest threat is a build-up of boll worms. One county agent says there are numerous boll worm eggs and a few small worms in nearly every field. Unless farmers start new control measures the cotton may be filled with adult boll worms within the next week or two.

Reports from other counties present about the same pictures. Lygus bugs are more numerous than usual but have caused little damage. Other insects expected within the next few weeks are cabbage loopers and perhaps leaf worms. They are often poisoned at the same time boll worms are active.

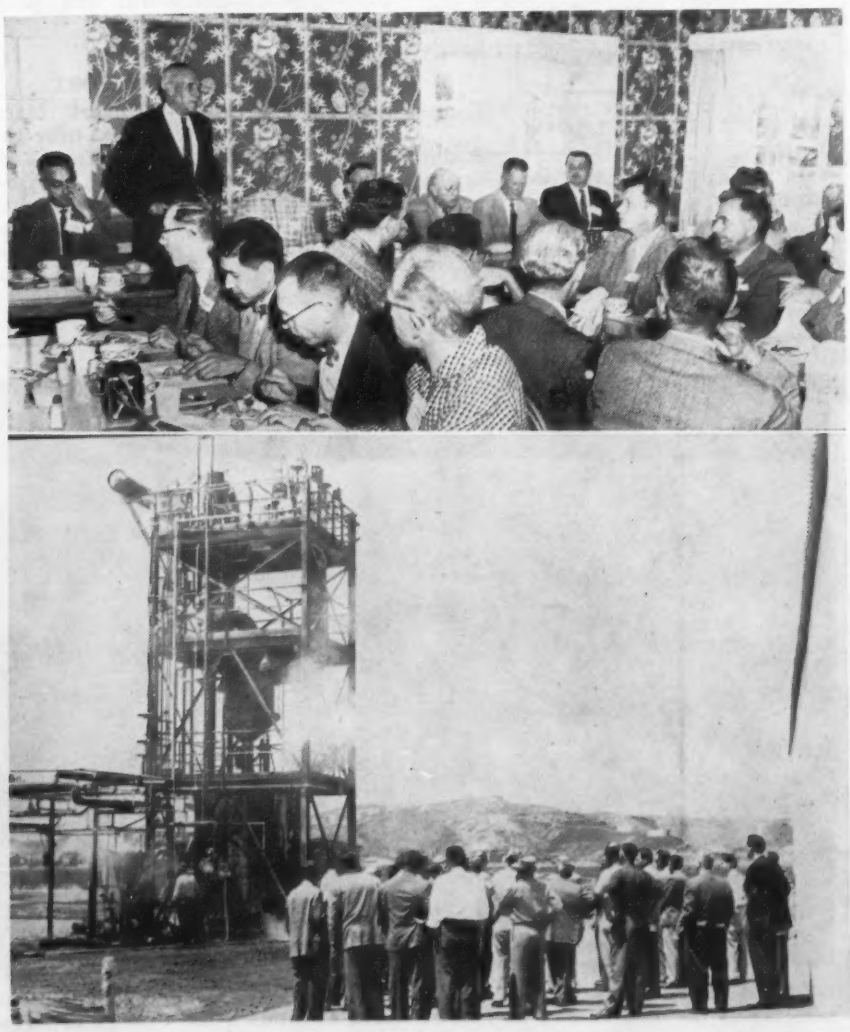
Lygus, Other Insects Hit Arizona Cotton

PHOENIX, ARIZ.—(June 27) Some concern is felt about the large plants and very little fruiting in many fields examined the past week. Stubbed cotton fields, both long and short staple, doing especially well. In fact, some open bolls already can be found in a few plantings in Yuma and Maricopa counties.

Insects, mainly Lygus bugs, fleahoppers, and thrips, continue to be a major problem in all counties. Despite high populations of beneficial insects, the crop in some fields has been hurt seriously. Very little fruiting is going on, and the plants are growing more vegetatively than they should. Insects are destroying a high percentage of the small forms almost as soon as they appear, and all fields should be watched closely.

In Graham County high Lygus counts are reported with some fields having as many as 44 per 100 sweeps. Some dusting and spraying in progress, both by ground and airplane.

In Pinal County—Lygus and fleahopper counts average 6 to 10 each in most fields with Lygus occasionally as high as 20. An average of 2 stink bugs per 100 sweeps was also found in all fields examined during the week. Thrips are causing damage in many fields throughout



SCIENTISTS LEARN FIRST-HAND—Agricultural scientists from the Berkeley and Davis campuses of the University of California spent the day recently getting a personally-conducted tour of fertilizer manufacturing facilities in the Richmond, Cal., area. Above, Arthur W. Mohr, president of California Spray-Chemical Corp., Richmond, addresses the 42 scientists at a luncheon. Later in the day the group visited three other East Bay chemical fertilizer plants on a tour sponsored by the National Plant Food Institute. Below, the group is seen inspecting the ammonium nitrate unit of Calspray.

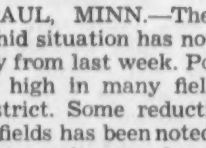
the county. Green leafhoppers are also present in many plantings but damage is light. Despite high populations of beneficial insects, quite a bit of insect injury can be seen, and control is warranted in many fields. Many fields are showing a high percentage of blasted squares.

Stubbed cotton is beginning to open on the Yuma-Mesa, and a noticeable increase in Lygus nymphs in all areas during the past week is reported. Cotton fleahoppers, bollworms, cabbage loopers, stink bugs, and a few leaf perforators also are appearing generally.

The following counts are given by specific area: Gila Valley—5-25 Lygus and fleahoppers, 2 stink bugs. Yuma-Mesa—6 Lygus and 5 stink bugs in stubbed cotton, 4 Lygus in planted cotton. Yuma-Valley—9 Lygus, leaf perforators on the increase. Some bollworm damage also found. Somerton—6-12 Lygus, 12 fleahoppers, 6 stink bugs. Lygus nymphs present in great numbers. Wellton—6 Lygus. Some bollworms and looper also found. Roll—12 Lygus, mostly nymphs. Loopers, bollworms, and leaf perforators also present.

Thrips, Lygus and fleahoppers in Cochise County continue to cause widespread damage, especially in untreated fields. In many cases, cotton plants are large but have few if any squares and flowers.

In Pima County, lygus, fleahoppers, and thrips continue to be a threat, and control is warranted in many fields.—J. N. Roney.



Kansas Spray Program Nears Completion

MANHATTAN, KAN.—The roadside grasshopper spraying program in western Kansas is nearing completion. All counties sprayed by airplanes are complete. Eight of the twelve counties spraying roadsides with ground equipment are complete. Highways and railroad right of ways in the area have been sprayed. The principal grasshopper species, lesser migratory, thistle, and two striped grasshoppers are starting to lay eggs, so control measures to prevent next year's populations must be applied right now.

Chinch bug control at this late date will probably require complete field application. Sudan grass that will be summer pasture should be sprayed.

No spotted alfalfa aphids were found in central Kansas this week. (June 28.)

There had been considerable damage to sorghum seed before germination this spring. In western Kansas counties the seed corn beetle has caused the damage. Kafir ants are usually the insect in central or eastern Kansas counties. Insecticide seed treatment either along or in combination with fungicide will prevent the damage. Cutworms have been found cutting the plant above the seed in both corn and sorghum. Spraying the field may be needed before replanting for the black cutworm.—David L. Matthew and Dell E. Gates.

Insect Development Watched Closely

ST. PAUL, MINN.—The English grain aphid situation has not changed markedly from last week. Populations continue high in many fields in the N.W. district. Some reduction in individual fields has been noted. In some cases, heavy rains may have been responsible. Populations vary greatly—counts range from 8 to 250 per linear foot of row. Counts in central Minnesota ranged from 15 to 50 per linear foot. Cool temperatures have slowed aphid development. Predator population continues low. Few fields have been treated.

County agents and farmers in infested areas are aware of problems and are watching developments closely. Treatment recommended only when evidence of injury is noted.

Approximately 75% or more of the corn borer moths have now emerged in southern half of state and normally a marked increase in egg deposition would be expected. Cool weather however has restricted moth activity and egg counts have remained very low. The highest count was 24 egg masses per 100 plants in a field of early corn in Rock County. Majority of fields examined had 0-4 egg masses per 100 plants.

Warmer weather, especially warm nights, will stimulate moth activity.

Cool weather has apparently delayed grasshopper hatching and development in western and central Minnesota. Two-striped grasshopper nymphs in Clay, Wilkin, Pope and Stearns Counties range from first to fourth instar with majority in first and second instar. Populations ranging from light (less than five per square yard) to 20 per square yard along the margins and roadside ditches. There are still eggs of M. bivittatus which have not hatched, but are fully developed.

Red-legged grasshopper hatch is confined to only an occasional favorable location. In general, eggs range from eye-spot to full development. A few warm days will bring on hatching. Bean leaf beetle checks in the Mankato area indicate a high population present in many fields of soybeans. Heavy feeding observed particularly on fields adjacent to alfalfa. Leaf defoliation ranges up to 80% in many fields. Pea aphid counts continue high in both alfalfa and peas in S.C., S.W. and W.C. districts.

Armyworm Development Rapid in Illinois

URBANA, ILL.—Armyworm moths were still moderately abundant in northern Illinois as June ended. Heavy infestations of the worms have occurred in wheat in northwestern Illinois, and damage is evident in these fields. During the next two weeks, carefully inspect grain fields, grassy pastures, waterways, fencerows, farm lots, and ditch banks where there is luxuriant growth of grains and grasses for moths.

Corn borer pupation is complete throughout Illinois; moth emergence is complete in all except the northern two tiers of counties, where it varies from 50 to 75%.

In general, borers are much more noticeable on the west side of the

(Turn to **INSECT NOTES**, page 8)

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FOLLOW-UP STORY . . .

Enzyme's Catalytic Action Explained in Relation to Use in Fertilizer Industry

By Dr. Vincent Sauchelli
Chemical Technologist
National Plant Food Institute
Washington, D.C.

ENZYMES were referred to in a previous article (Croplife, June 9, page 6) in connection with the role of trace elements and hunger signs of deficiencies. Several readers, apparently unfamiliar with the word, have requested an explanation with examples. What follows is an attempt to give briefly an elementary explanation.

The dictionary defines "enzyme" as any of a class of naturally occurring, organic substances that speed-up or catalyze specific changes in plant and animal materials. The word is derived from the Greek and means "to leaven." Prior to the scientific age such substances were generally referred to as "ferments." Enzymes are produced only by living cells, but their specific action does not depend on the life processes and they are not consumed in the chemical reactions in which they may be involved.

Dr. Sauchelli

A simple illustration: try burning a lump of sugar with a match. The sugar won't burn. But dust a little cigarette ash on it and presto, it burns. Yet, the ash itself is not affected. It promoted the burning action but remained unaffected by the combustion. The ash acted as a catalyst or inorganic enzyme. Throughout nature thousands of fundamental chemical reactions occur in the presence of these action-accelerating substances called catalysts or enzymes. The characteristic of a catalytic or enzymatic reaction is that the stimulating substance—the cigarette ash in our example—is not itself changed in any way.

As previously mentioned, only living cells can create an enzyme and enzymes are essential to the life processes. Every agricultural product in the natural state contains the enzymes it has created for its own use. Modern industry is finding new and increasing uses for enzymes in food processing and other applications. A broader and deeper knowledge of how they function is being developed by government and industrial researchers in order that they may be utilized more effectively. For example, "shoe leather" steak on the American dinner table will soon be the exception, say these investigators. They have been able to extract enzymes from pineapples, figs and papayas which can tenderize the tough, connective tissues and muscle fibers found in the meat.

It is estimated that at present meat packers use more than 20,000 gal. of enzyme meat tenderizers a month. The general practice of obtaining tender, juicy steaks is to grain-fatten the steer and age the meat. Now, the chemically-produced enzyme tenderizers will be able to do the job in less time and at lower cost. The meat packer dips meat in the tenderizing enzyme solution 60 seconds and promptly freezes the meat to halt the enzyme action. A strong solution of pineapple-derived enzyme will dissolve a piece of meat in 12 hours. Meat tenderizers are now being retailed for home use.

The saliva of humans contains an enzyme called ptyalin which is soluble. Pepsin is another familiar substance which is in fact an enzyme. Enzymes are essential to man in almost every chemical reaction in the digestion of food in the mouth, the stomach and the intestine. They accelerate reactions at body temperature transforming starch into sugars, fats to fatty acids and proteins to amino acids.

Consider a dry grain of wheat at rest. Plant it and soon things happen. It sprouts. It grows. We know it has to burn up its reserve of oil and starch to get the energy with which to grow, and yet it remains cool and moist. That sprouting grain had something in itself which speeded up its metabolism without creating excessive heat. That something was its enzymes which are produced by all living cells for use in their vital functions. Each one of the multitude of chemical reactions which are constantly taking place in every living cell has a specific enzyme to hurry it along. These mysterious substances being protein in nature have so far baffled chemists in their efforts to reproduce them synthetically. However, industry has learned how to extract them from living tissues.

Many foodstuffs are rich in certain enzymes. Cereal grains, and starchy vegetables, for examples, are well supplied with them for transforming starch into sugar. Cut apples and peaches darken because of the presence of an enzyme which oxidizes certain substances in them. We have learned how to reduce the action of enzymes which destroys the value of raw foodstuffs. Heat will destroy enzymes and cold storage will minimize their activity. Dehydration and immersion in syrup or the retarding of the respiratory enzymes of raw fruits and vegetables by an atmosphere of carbon dioxide are other practices to eliminate or control enzymatic influences.

All person in the fertilizer industry perhaps do not know that today more than 10 million tons of sulfuric acid is produced synthetically with the use of a catalyst containing vanadium oxide. A catalyst of granular iron oxide makes possible the economic production of ammonia out of hydrogen and atmospheric nitrogen. Modern technology would be impossible were catalysts or enzymes suddenly to become unavailable.

The mysterious force which enables these chemical compounds to spark the surges of chemical activity in otherwise inert substances comes from the energy which resides in all matter. Numerous theories have been invented to explain the activity of enzymes or catalysts. Their effect is associated with surface or adsorption phenomena. They are too technical to describe in this brief attempt at explanation. Suffice it to say that in the future, agricultural research will inevitably be concerned to an increasing extent with enzymes and their influences in crops, soils and food processing.

Industry Trade Marks

.The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of $25 must accompany each notice of opposition.

F N, in capital letters, for friable glass-like substances in finely divided form containing essential plant foods for use as a fertilizer. Filed May 23, 1957, by Ferro Corp., Cleveland, Ohio. First use May 8, 1957.

Fertrell, in capital letters, for fertilizers and soil conditioners. Filed June 27, 1957, by The Organic Development Co., Fullerton, Md. First use Jan. 9, 1956.

Codling Moth Threatens Massachusetts Orchards

AMHERST, MASS.—In the most advanced orchards, codling moth egg laying and hatching are already well underway. All orchards should now be protected against codling moth. In problem blocks, growers should plan to renew their spray protection after a heavy, washing rain or after 10-12 days even if no rain occurred.

Green aphid colonies are now appearing on terminals. Growers are urged to remove watersprouts and spray or dust young and non-bearing trees to destroy sources of reinfestation. Green aphid on bearing trees should then be controlled in regular applications before much leaf curling takes place.

Bean beetle adults and eggs now found on beans, and flea beetles are still causing damage to some of these crops.

A regular program for corn borer control should now be on all earliest corn. Treat later plantings as they reach 10-14" in height at the whorl mouth during the next three weeks.

JOIN AIRCRAFT ASSOCIATION

FRESNO, CAL.—Caldwell Flying Service, P. O. Box 124, Williams, Cal., and Henry Crop Dusters, P. O. Box 375, Gonzales, Cal., have joined the Agricultural Aircraft Assn. here.

Industry Patents and Trademarks

2,840,503

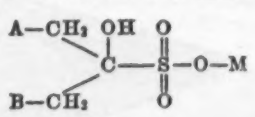
Soil Fumigation. Patent issued to Richard R. Whetstone, Denver, Colo., and Seaver A. Ballard, Orinda, Cal., assignors to Shell Development Co., New York. In the treatment of agricultural soil infested with phytopathogenic organisms, the step which comprises disseminating into the infested soil a substituted low molecular weight olefin characterized by the presence of a plurality of acyloxy substituent groups directly attached to the olefinic residue said olefinic residue having not more than 8 carbon atoms, in a concentration toxic to said phytopathogenic organisms.

2,840,504

Phenothiazine Compositions. Patent issued to Donald E. Vierling, Pittsburgh, Pa. An anthelmintic composition comprising a liquid suspension of about one part by weight of phenothiazine and at least about one part by weight of an inert, non-toxic, palatable, liquid, viscous stable agent having adhering characteristics and substantially enveloping said phenothiazine, said stable agent being selected from the group of animal-edible syrups and oils consisting of lecithin, olive oil, corn syrup, mineral oil and cod liver oil, said composition possessing sufficient consistency to preclude its flowing freely through legumes and the like.

2,840,501

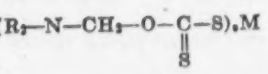
Agronomical Practice for the Protection of Crops. Patent issued June 24, 1958, to Lloyd J. Meuli, Long Beach, Cal., assignor to the Dow Chemical Co., Midland, Mich. An agronomical practice which comprises impregnating fungi infected soil with from 5 to 50 parts by weight of a sulfonate compound per million parts by weight of said soil and thereafter planting the treated soil, the sulfonate compound being characterized by the formula



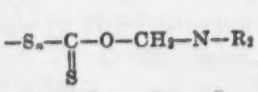
wherein A is a member of the group consisting of bromine and chlorine, B is a member of the group consisting of hydrogen and the halogen represented by A, and M is an alkali metal.

2,840,502

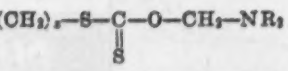
Fungicidal Compositions. Patent issued June 24, 1958, to Joseph A. Lambrech, Charleston, W. Va., assignor to Union Carbide Corp. A compound of the formula



where: M is a member of the group consisting of metals of Groups I, II, III, IV, VII and VIII of the periodic table, lower-alkylamine radicals, a radical of the formula



a radical of the formula



v is an integer not greater than the valance of M; n and x are from 1 to 3 inclusive; R is a lower alkyl radical.

Method of combatting fungi which comprises applying to the host a compound as defined above.

Bill Hightower

JOINS VELSICOL—Bill Hightower has been appointed to the position of technical sales representative by Velsicol Chemical Corp. Mr. Hightower joined the company's agricultural chemical division, and will operate in the Tennessee-Arkansas area, under the direction of L. F. Bewick. His headquarters will be at 1306 Myrtle St., Greenwood, Miss. Before joining Velsicol, Mr. Hightower was a sales representative for Diamond Black Leaf Co., and, previously, was responsible for selling aircraft application services and making pesticide recommendations for Delta Airlines agricultural division. Mr. Hightower is a graduate of Mississippi State College, where he obtained a B.S. in agriculture.

THE INSECTICIDE INDUSTRY . . .

American Pesticide Makers Contribute to World Health

By Melvin Goldberg

Pesticide Advisory Service
New York

THE present day pesticide industry, as we know it today, had its real beginning in the period of World War II and immediately following thereafter. While there were some synthetic materials developed prior to World War II, the advent of DDT, followed by a whole series of synthetic organic materials, really opened the way to the present pesticide field as we now know it.

Entomologists, chemists, physiologists, pharmacologists and numerous other scientists in both industry and various governments continue to add to the products that are so important to this phase of the American economy. Several multi-million dollars are spent today producing literally thousands of pesticides. Alphabetically they range from Aldrin, an insecticide, to Ziram, a dithiocarbamate fungicide.

There are now materials to combat many of the pests that cost the American economy alone over nine billion dollars a year. The gradual influence of the American pesticide industry has pushed beyond the borders of the North American continent to practically every town, village and political sub-division throughout the entire world.

It is now estimated that pesticide chemical manufacturers are spending more than $20 million a year on research and development, according to a survey recently completed by the National Agricultural Chemicals Assn. This is a jump of 150% devoted to research since 1950. Involved in this increased research budget, according to the NAC, are many new laboratory facilities, experimental farms and grants made to state agricultural experiment stations. Moreover, it is estimated that the federal government agencies are now spending some five million dollars on research in this field.

It has been estimated from time to time that development of a new product will cost between $¾ of a million to over $3 million for the marketing of the final product. This figure includes preliminary market analysis, synthesis, actual production in the labs, formulation research, the necessary pharmacological and toxicological research to qualify under various federal and state laws regulating the manufacture and sale of these products, and further includes the necessary money for the commercial development, merchandising, sale and necessary publicity to continue the sales of these products.

Anywhere from 3 to 7 years are required for the complete commercial development of a new product. Unfortunately, the development cost has risen sharply in the past two years because of the very strict regulations which have been placed upon this industry and its products.

One of our serious insect infestations recently in the news is the grasshopper horde covering our midwestern and southwestern states. Materials used in the control of this pest, namely, Aldrin, Heptachlor and other chlorinated hydrocarbons, have been in actual production on a wide-scale basis only a little over four years. All of this has been made possible by the expenditures over many years, of chemical companies who had the foresight, the ingenuity, the skill and the necessary venture capital to undertake this basic research, thus making chemical control feasible and possible.

EDITOR'S NOTE

This is the first of a series of articles to be carried from time to time by Croplife directed to the interests of the pesticide manufacturing trade. Prepared by Melvin Goldberg, Pesticide Advisory Service, New York, the material will contain information on the general effect of economic, political, and weather conditions on pesticides and their markets.

For the sake of clarity, Mr. Goldberg says that his use of the term "pesticide" includes chemical preparations used in the control of insects, weeds, rodents, fungus and similar types of pests which affect food and fiber crops. The relationship of pesticides in the field of health will also be considered, with emphasis, of course, on those diseases spread by insects. These would include malaria, typhus, and maladies of similar nature.

Supplies Ample

The supply situation on pesticidal chemicals for the coming season is comfortable and outside of spotty shortages due to concentrated use in certain areas, there is no problem foreseen. The price situation on most of the old standbys such as the chlorinated materials has been fairly steady for the year and should remain quite stable barring any emergency uses such as could well occur throughout the growing season.

The organic phosphates for the most part have already suffered because of the effect of poor cotton planting weather and stiffened competition because of the entrance of several new products. An increase in imported material, particularly in Parathion and methyl Parathion, has added to this price weakness. From the very start of the season, both of these materials have suffered a decrease of almost 15%.

Malathion, growing in importance because of certain unique features as far as toxicity is concerned, continues to make steady sales increases. It is finding increasing use in certain areas previously held by other insecticides, particularly the botanicals.

As of this writing, there is a possibility that technical DDT will be in tight supply during the July-August period. This threatened shortage started in the earlier months of 1958 because of very heavy demands in the export of 75% DDT wettable powder for malarial control in India, Pakistan, Indonesia and other southeastern countries. The producers have not fully caught up with the heavy domestic demand which usually breaks in the April-May period. If there are further emergency export demands coming up which break prior to the heavy domestic consuming season for cotton and corn, there is a danger of the possibility of an increase in price as well as a shortened supply.

JOIN AIRCRAFT GROUP

FRESNO, CAL.—Four flying services recently joined the Agricultural Aircraft Assn. here. They are Bronner's Flying Service of Biggs, Cal., owned by Theodore Bronner; Bud Marquis Airplane Crop Dusting of Marysville, Cal., owned by Bud Marquis; Frank's Agricultural Flying Service of Chico, Cal., owned by Frank Ponke, and Green Acres Airport, Inc., owned by M. B. Martin and Arnold Whisman.

Alabama Fertilizer Conference Scheduled

AUBURN, ALA.—The annual conference for the fertilizer industry will be held at the Alabama Polytechnic Institute Agricultural Experiment Station's Black Belt Substation, Marion Junction, July 29 and Prattville Experiment Field July 30. The conference will be co-sponsored by the API Station, Extension Service and the Alabama Soil Fertility Society.

Appearing on the morning program at Marion Junction will be Dr. E. V. Smith, director, API Station, discussing the future of Alabama agriculture. A tour observing fertility studies at the Black Belt Substation will be conducted by L. A. Smith, superintendent and Howard W. Grimes, assistant superintendent.

In the afternoon, Kirby Hays, assistant entomologist, will discuss fire ant control; V. S. Searcy, assistant agronomist, chemical weed control; W. R. Langford, associate agronomist, new forage species; R. M. Patterson, associate agronomist, pasture renovation; E. M. Evans, associate agronomist, nitrogen and irrigation for forage; L. E. Ensminger, soil chemist, fertilizer needs and R. D. Rouse, soil chemist, how reliable are soil test recommendations?

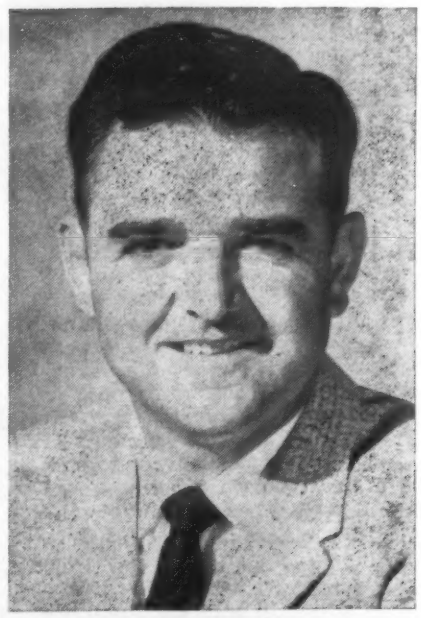
The presentation of an achievement award to James C. Britton, outstanding junior in agronomy at API, will be made by the National Plant Food Institute. Howard T. Rogers, head, agronomy and soils department, and Hoyt M. Warren, district agent, Extension Service, will preside.

The July 30 session will consist of a tour of the Prattville Experiment Field conducted by F. E. Bertram, superintendent, and J. T. Cope, Jr., associate agronomist in charge of experiment fields.

Walnut Aphid Harder To Kill This Season

BERKELEY, CAL.—The walnut aphid is more difficult to kill with parathion, tests at an experimental orchard near Linden have indicated.

According to A. E. Michelbacher, University of California entomologist, treatment of past years applied with an air carrier sprayer gave excellent control for a period of six or more weeks, but this year, in orchard experiments and in some grower applications in the Linden area, control with the same treatment has not been entirely satisfactory. Young aphids are still knocked out, but some of the later forms appear able to resist the toxic chemical, Mr. Michelbacher says.



SUNLAND PROMOTION — Ross S. Miller has been appointed manager of the Kern County Division for Sunland Industries, Inc. and will assume his new duties with headquarters in Bakersfield effective immediately, according to an announcement by Frank A. Easton, president of Sunland. Mr. Miller first joined Sunland Industries Feb. 1, 1953 in Wasco, Kern County, as a field representative and since this time has advanced to manager of the Delta Fertilizer Co., a Sunland subsidiary, to division manager of the Stockton area before assuming his new duties as manager for the Kern County Division. Jack Ford, branch manager of Sunland Industries in Bakersfield, will retain his same position with Sunland, as manager of the Bakersfield Branch.

FMC Appointments

NEW YORK—The Chemical Divisions of Food Machinery and Chemical Corp. have announced the appointment of William A. Kebba as manager of planning and control for the Inorganic Chemicals Department, and Robert H. Malott as manager of planning and control for the Organic Chemicals Department. Both positions have been newly created as part of the current reorganization of the divisions.

4-H CLUB POST

CHICAGO—The National Committee on Boys and Girls Club Work has elected to its board of directors S. L. Nevins, Little Rock, Ark., vice president of Olin Mathieson Chemical Corp., Plant Food Division. Mr. Nevins is one of 12 directors who manage the affairs of the committee, a non-profit organization cooperating

TRAINING SESSION—Two representatives of the fertilizer industry were guest speakers at Union Bag-Camp Paper Corp.'s recent training session for the company's multiwall bag salesmen. They were J. B. Lynch, general purchasing agent for Smith-Douglass Company, Inc., Norfolk, Virginia (shown above addressing salesmen) and R. A. Garn, manager, chemical processing division, Farm Bureau Cooperative Assn., Inc., Columbus, Ohio. (Above, inset). The title of the talk by Mr. Lynch was "Working With the Professional Buyer." Mr. Garn took as his subject "The Fertilizer Manufacturer Looks at Packaging."

INSECT NOTES

(Continued from page 5)

state than on the east. Also, much of the corn is now tall enough that egg-laying is diluted over many fields and not concentrated in a few.

In the western section, north of St. Louis, egg-laying is practically complete. A few exceptionally advanced fields in this area may warrant treatment, but time for optimum control will soon be past. If insecticides are used, they should be applied immediately. As soon as borers drill into the stalk proper, they cannot be reached with insecticides. In the area between Quincy and Rock Island, an occasional well-advanced field will warrant treatment.

In northwestern Illinois, egg-laying has started but is still low. Cold nights have prevented flight of moths and egg-laying. In addition, there are still some moths to emerge. Occasional fields may profitably be treated, but probably not after July 4.

In northeastern Illinois, egg-laying was just starting, but it is doubtful that any fields will need treatment. Fields may warrant treatment if the tassel ratio is 30 or above and 75% or more of the plants show fresh borer feeding on the whorl leaves.

Corn root aphid has appeared in the northern half of Illinois. It is a small green to blue soft-bodied insect that sucks sap from the roots of corn. Ants almost always accompany corn root aphids. Infested plants may be stunted or show slight purpling or drying of leaves. Most infested corn will continue to grow and produce, but yields will be slightly affected.

The cool weather of the past two weeks also retarded the development of grape colaspis. Thus feeding has continued a bit longer than would normally be expected. It should be finished soon, however, and damaged plants, if not already killed, should soon show signs of recovery.—H. B. Petty.

Pests Damaging Trees In Florida County

GAINESVILLE, FLA. — Noctuids (Melipotis acontioides [Guer.]) were found doing considerable damage to royal poinciana at Key West, Monroe County. One-third of 400 trees inspected were completely defoliated. The infestation appears to have reached its peak and is on the decline. Pupae were scarce, being found in loose soil at the base of trees. They are apparently limited to this tree and the larvae which are damaging other trees in the area are not this species.

Oedemerids (Alloxacis spp.) were again found at Sunken Treasure Tower in the Tavernier area, Monroe County, but in decreasing numbers. These "blister beetles" generally appear in March and decline in May and June. They are causing a loss of business in this area. The larvae feed in rotten wood and the large populations are probably associated with land clearing operations.—R. E. Woodruff.

Wyoming Girds for Grasshopper Attack

CHEYENNE, WYO.—Several Wyoming areas are marshalling forces for grasshopper control programs, Everett Spackman, state entomologist, has disclosed.

Among the first to hold organizational meetings are Sheridan County in northern Wyoming and Niobrara County in the eastern part of the state.

Wyoming's grasshopper infestation is "below normal," says state agriculture commissioner William C. Chapman. He attributes the low infestation to control programs conducted in the state since 1951.

Mr. Spackman says cool weather in the northern part of the state has slowed grasshopper development in that region. He says only small control programs are planned in these areas, mostly in places where there has been no program conducted within recent years.

The meetings were held as a preliminary step to the control programs.

Grasshoppers are approaching their adult or eating stages in the state, Mr. Spackman reports.

Cotton Pests Threaten Tennessee Fields

KNOXVILLE, TENN. — Cotton is growing rapidly in most sections of West Tennessee, putting on good growth in most of the areas. Some cotton is still just coming up in some fields in the northwestern section of the state. Most fields are clean with chopping still going on in most areas. Some small squares were found in older cotton this week.

Only a very limited number of weevils have been found in the southern counties this season with none being found north of the southern tier of counties so far. Weevil feeding signs in the terminal bud are hard to detect due to a complex of worms causing damage at this time. Evidently there has been considerabe mortality on the early emerging weevils due to late planting, however some weevils were expected to emerge from hibernation until about July 1 which has been the case in past years.

There is still a slight increase of thrips but in most cases cotton is growing fast enough to offset the injury. Some young fields definitely need control to promote more growth.

Aphid infestations are light in the southern half of the state, but extremely heavy in the Lake County area. Control is definitely needed in most of Lake County. Conditions are favorable for build-up at this time. Aphid predators are numerous but infestations are not being held in check.

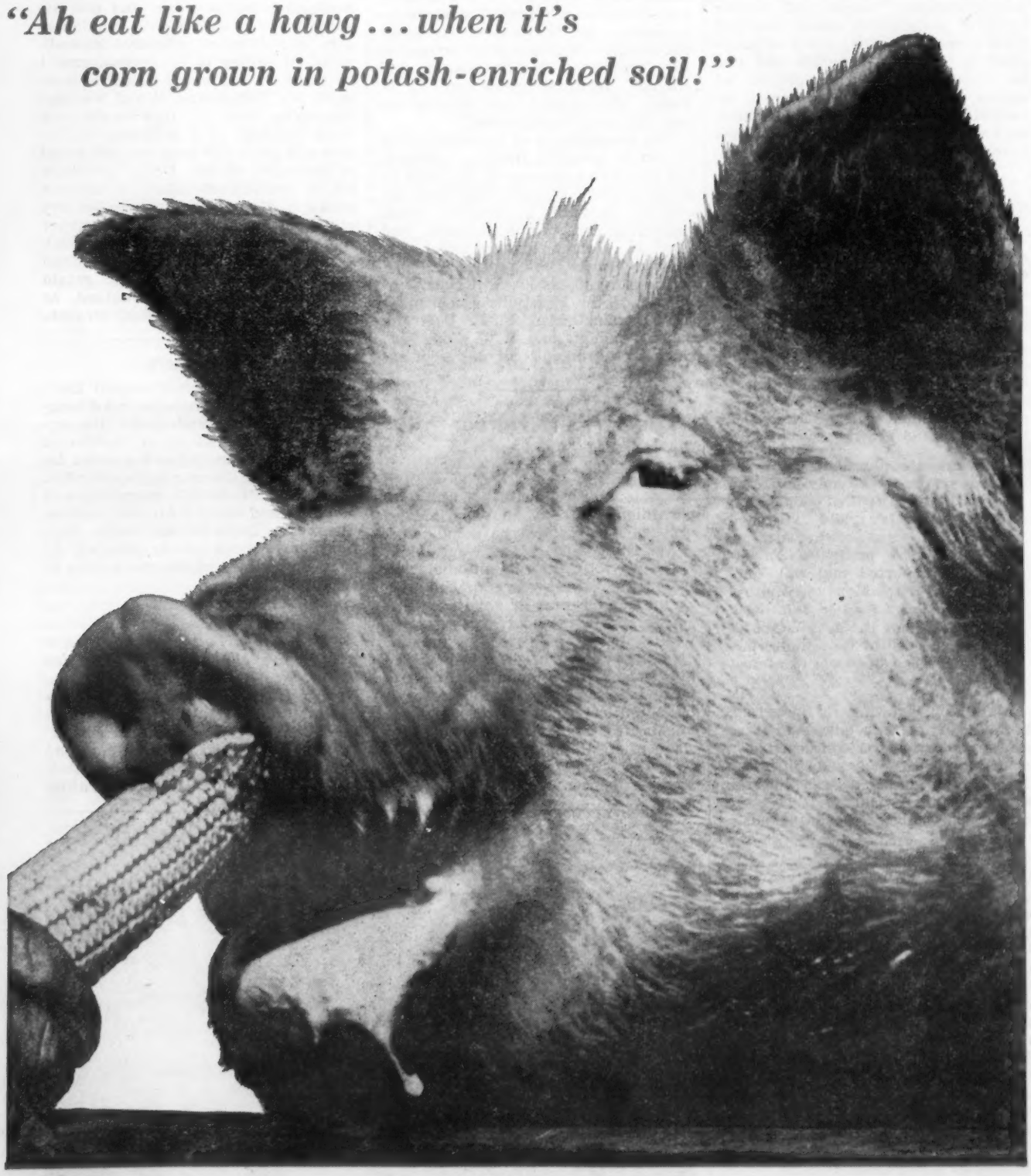
Flea beetles continue to cause light damage, and the flea hopper is present in most fields to the extent that some square injury can be expected unless control measures are taken.

Common stalk borer is present again this season with scattered light damage and yellow striped armyworm is causing some foliage injury, but damage is light.

The cabbage looper is causing the heaviest damage in years along with a complex of boll worm, a webworm and the yellow striped armyworm.

Corn borers are presently appearing in corn. It is most serious on sweet corn. It has generally not been a serious pest on corn except locally.

"Ah eat like a hawg... when it's corn grown in potash-enriched soil!"



FERTILIZER MANUFACTURERS—you can count on the United States Potash Company for know-how and experience in the production of potash. USP now offers 3 outstanding grades. USP's Higran and Higrade muriate (both white, both with 62/63% K_2O) are the purest agricultural muriates now available. USP's Granular muriate of potash (pink-red) contains 60% K_2O. All three grades are non-caking and free-flowing throughout.

Our Technical Service Department welcomes your inquiries.

UNITED STATES POTASH COMPANY
DIVISION OF UNITED STATES BORAX & CHEMICAL CORPORATION
50 Rockefeller Plaza, New York 20, New York
Southern Sales Office: Rhodes-Haverty Building, Atlanta, Georgia

SUNSHINE STATE POTASH — PRODUCT OF NEW MEXICO U.S.A. — REG. U.S. PAT. OFF.

MEMBER: AMERICAN POTASH INSTITUTE

FARM SUPPLIES ON DISPLAY—One of the top selling lines in the Niemeyer Farm Store, Mattoon, Ill., is insecticides. Four long, wooden shelves along the rear wall of the store are stocked with insecticides and poultry remedies. In season, these are also carried in island displays at the front of the store.

Illinois Dealer Finds Farm Supply Store Builds Profits

By Al P. Nelson
Croplife Special Writer

An excellent fertilizer volume is done by the Niemeyer Farm Store, Mattoon, Ill., but a farm supply store in the front of the mill is a real money-maker, too.

This farm store, stocking a wide variety of farm items, accounted for 26% of the firm's profit last year. Feed and fertilizer accounted for the rest, according to Forrest Campbell, manager.

"A well-stocked store like this makes sales almost by itself," says Mr. Campbell. "We keep the items clean, well-displayed and lighted, and, of course, do some related selling when we can. But the large majority of our sales come from farmers who walk in to pay bills or to inquire about products. They see some item, ask questions and often they buy."

Mr. Campbell, who manages the store for H. Niemeyer, who also has a coal business, said the store carries items such as veterinary tools, electric fence, power lawn mowers, insecticides, steel goods, farm chemicals, egg crates and pails, poultry and barn equipment, V belts, sprayers, charcoal pellets, barn and house and machinery paint.

Mr. Campbell says he sells a lot of paints. Many farmers buy paint to give their farm machinery a new look and to keep it from rusting. Farm machinery now represents a big investment for the farmer, and he wants to keep it in good condition, Mr. Campbell said. Likewise, the farmer has found that it pays to keep his buildings painted, both barn and house, and the Niemeyer Farm Store sells a large volume of paint for this purpose.

"We find that paint is a year-around item," says Mr. Campbell. "In spring, summer and fall, the farmer buys paint for the building exteriors. In fall and winter, he buys and uses paint for machinery and also for home interiors. Believe me, many farmers can buy and use more than $200 worth of paint, brushes and supplies in one year. Paint is a fine related line with us, for practically every one of our customers is a prospect."

This store also has a stock of hog serums for use by farmers, and it keeps them in a refrigerator.

Another line which sells well is insecticides. Mr. Campbell has a large stock well displayed. Four long, wooden shelves on the rear wall of the store are stocked with insecticides and poultry remedies. In season, a couple of up-front islands carry these materials, too.

The store carries a stock of veterinary tools which farmers are buying. Castrator tools are very much in demand in this hog and cattle country.

V belts are used extensively on almost every farm, so Mr. Campbell has a sizeable stock. Screws and bolts and other farm hardware are in excellent demand, too, for farmers have constant need of such items in a mechanized operation.

"As farms become more mechanized

(Turn to ILLINOIS DEALER, page 14)

SHOP TALK

OVER THE COUNTER

By Emmet J. Hoffman
Croplife Marketing Editor

Credit can be profitable to the dealer who controls it but disastrous to the one who lets credit control his business operations. This is hardly a new expression but nevertheless one which is basically accurate and worthy of repetition. Unfortunate experiences with bad credit accounts still occur entirely too often. In most cases these losses could have been avoided if a sound credit program had been in effect.

At a recent dealers' meeting, D. H. Elmore, credit manager for a large manufacturing concern, stated that "credit is a wonderful sales tool but like any other tool, the dealer must become proficient in the use of it.

"If a dollar bill so covers your eyes when making a credit sale that you cannot use your good judgment, you are not using your credit tool as you should. You are in business to make a profit. Be sure you do."

The success of any credit control program does not depend so much on the policies which make up that program as on the skill with which a program is administered and the consistency of the execution of that credit policy.

Fundamentals of a Good Credit Program

The fundamentals for a good credit program, Mr. Elmore continued, are: "(1) Know your applicant, (2) have a definite understanding on terms, and (3) maintain a systematic and consistent collection effort.

"In installing a credit program, the first step is announcing your credit policy in a warm and friendly letter to every customer you have," he told the dealers.

"This brings up the problem of collecting past due accounts so that the new policy is meaningful."

As important points in collection, Mr. Elmore listed the following:

"1. Get the debtor to like you so that he will want to pay the account. Sell him on the importance of paying his account.

"2. Get a part-payment with a definite arrangement for paying the balance.

"3. Be sure that any arrangement made for payment later is a definite

(Turn to OVER THE COUNTER, page 11)

Thomas E. Milliman Honored by G.L.F.

ITHACA, N.Y.—Thomas E. Milliman, credited with "changing for lasting good the face of Northeastern agriculture," was honored recently by fellow executives of Cooperative G.L.F. Exchange. The former head of G.L.F. soil building division, now G.L.F. historian, accepted a citation signed by 27 executives of the cooperative. The citation was presented for "your personal achievements and for the stimulating privilege of working with you." Mr. Milliman also accepted an ironwork weathervane. The citation calls him one of the "few with the courage and competence to provoke significant change."

With G.L.F. 30 years, Mr. Milliman guided the soil building division in its early years and is credited with many new practices in the fertilizer business. These include the promotion of the use of superphosphate and granular superphosphate, development of equipment to spread lime and fertilizer from trucks, manufacture of granular and high analysis fertilizers and packing fertilizer in 80 lb. paper bags.

In 1941-42 he was on leave, first to head agricultural chemicals for the Office of Price Administration and later in the War Production Board.

Massachusetts Launches Mosquito Control Fight

BOSTON—A mosquito control campaign is underway in Massachusetts with entomologists predicting a bumper crop this summer spawned by the long rainy spring. Mosquito control crews are ranging the state.

Lewis Wells, Quincy, superintendent of the South Shore Mosquito Control Project, said that since last December conditions have been ripening for the mosquito invasion. Two major factors are responsible, he contended: the excessive rainfall—in the six months' period Massachusetts had an average year's fall—and the prolonged cool weather.

"Mosquitoes breed in stagnant water, and low temperatures lengthen their life span," he said. "We are beginning to feel the effects now. Mosquitoes are coming in droves."

Dr. Bertram I. Gerry, executive secretary of the State Reclamation Board of the Department of Agriculture, said the problem has become acute in Braintree and South Weymouth where the Southeast Expressway is under construction. "Much of the new route goes through swampland where stagnant pools form and become ideal breeding grounds for the insects," he said.

Massachusetts is spending more than a half million dollars in mosquito control work, with the money furnished by the cities and towns engaging in the projects.

Dr. Gerry, an entomologist, who served with the Eighth Service Command in Dallas during World War II, worked on the state's first mosquito control project inaugurated in 1931. He said the coastal terrain is being hit first because of its extensive salt marshlands. The land is flat there and streams spread out creating swamps, which mosquitoes like.

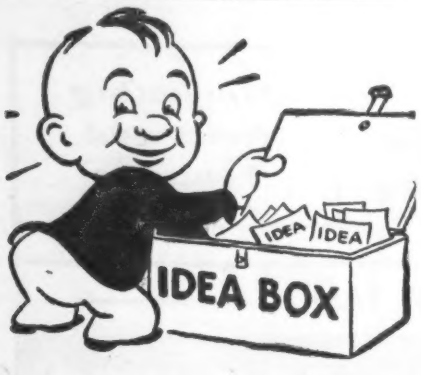
"When a mosquito control project starts, we are out on third base," Dr. Gerry said. "Everybody wants immediate results, but we can't get them overnight."

"If used in normal amounts and according to directions, there are no harmful effects from DDT," the superintendent of the South Shore control project advised. Other insecticides also are being used by the projects. Before World War II, Dr. Gerry pointed out, "people would spread out fuel oil on ponds and stagnant water. Now control measures demand highly trained crews who thoroughly understand the conditions and the insecticides best able to erase the problem."

Ditch and draining projects are deemed the permanent means of eradicating the mosquitoes. Because of this year's emergency, the major amount of control measures will be in the form of spraying.

"Money is allocated according to

(Turn to MOSQUITO DRIVE, page 15)



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6765—Irrigation Drip Tank

Fabricated Metals, Inc., has published new literature describing its No. 4301, 500-gal. irrigation drip tank for gravity and pressure applications. The tank is supported on legs that are both removable and adjustable for height. A 1-in. metering valve is provided for accurate adjustment of flow, the literature states. Check No. 6765 on the coupon and mail it to secure the literature.

No. 6768—Lining Materials

Wisconsin Protective Coating Co. has issued literature about its cold-set tank lining materials, which include coatings developed specifically for the fertilizer industry for service in nitrogen solutions, phosphoric acid, ammonium nitrate and other products. To obtain more details check No. 6768 and mail the coupon.

No. 6764—Soil Conditioning Agent

A new type soil conditioning agent has been developed by the Commonwealth Engineering Co. The agent is designed for use by manufacturers of commercial soil additives and is said to adjust to the individual needs of

specific soils. Secure details by checking No. 6764 on the coupon and mailing it to Croplife.

No. 6766—Movie About Gypsum

A sound slide film, "The Uses of Gypsum in Agriculture," is available from the United States Gypsum Co. for loan to county agents, vo-ag teachers and farm groups. The film describes the eight major uses for the firm's agricultural gypsum, which, according to the company, improves drainage of wet soils, clears muddy waters, breaks up plowpans and compacted soils, corrects irrigation waters, supplies neutral soluble calcium, conserves nitrogen in manure, supplies sulfate sulphur and stimulates soil micro-organisms. For more information check No. 6766 and return the card.

No. 6767—Publication

Monsanto Chemical Co.'s line of agricultural chemicals, including fertilizer materials, feed supplements, herbicides and insecticides, is described in detail in a special agricultural chemicals issue of Monsanto International, a 36-page publication for overseas distribution. Published in French, Spanish and English editions, the special issue details the properties of each of Monsanto's agricultural chemicals and describes how they are used in formulations. A guide to each product's use and the type of equipment necessary for application are provided for the grower. To receive a copy check No. 6767 and mail the coupon.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 7063—Vibrator

A new type vibrator to break bridging of materials in storage bins, supply ducts and containers has been developed by the Thayer Scale Corp. Vibration is not applied directly to the side walls of the hopper or duct, but rather to screens which are inserted within the chamber. Various sizes and shapes of vibrators are available. Check No. 7063 on the coupon and mail it to secure details.

No. 6756—'Amino Triazole' Weed Killer

A folder entitled, "For Clean Corn Land—Amino Triazole Weed Killer," has been prepared by the American Cyanamid Co. The product, explains the folder, kills Canada thistle, sow thistle, poison ivy, poison oak, honeysuckle, milkweed, leafy spurge and other weeds. Check No. 6756 on the coupon and mail it to secure details.

No. 6762—Centrifugal Pump

The Deming Co. has begun marketing a new "light-weight," self-priming portable centrifugal pump powered by a Briggs & Stratton engine. The pump is said to meet the requirements of handling liquid fertilizer. Called the "Fig.3,307," the pump has a stainless steel alloy pump shaft coupled to the engine shaft by a compression coupling which "assures perfect alignment." None of the liquid being pumped touches the engine shaft, it is claimed. Check No. 6762 on the coupon and mail it to secure details.

No. 7057—Dolly Bag Closer

An adjustable, portable, manually-operated dolly bag closer for closing small size bags has been announced by the Minneapolis Sewing Machine Co. The model—JD-4—closes paper, cotton or burlap bags of any size up to 25 lb. Check No. 7057 on the coupon and mail it to secure details. Please print or type name and address.

No. 6761—Concentrates

The Diamond Alkali Co. announces the availability of low volatile 6-lb. Ethyl Hexyl Esters of 2,4-D and 2,4,5-T to custom applicators of herbicides. These high acid equivalent concentrates are said to make possible substantial cost economies and provide a number of other important advantages in weed and brush killing operations. The concentrates may be mixed with water for an emulsion, with straight oil for an oil spray, or with a combination of oil and water. To secure further details please check No. 6761 on the coupon and mail it to Croplife.

No. 6760—"Sevin" Folder

A folder explaining how to use "Crag Sevin," a new insecticide for apples and pears, is available from Union Carbide Chemicals Co., Division of Union Carbide Corp. "Sevin" may now be purchased in limited quantities by experienced apple and pear growers for field testing. Secure the folder by checking No. 6760 on the coupon and mailing it to Croplife.

No. 6763—Granular Fertilizer Chain Mill

Literature describing the granular fertilizer chain mill manufactured by the Fertilizer Engineering & Equipment Co., Inc., is available. The mill is said to be a unit that cracks instead of pulverizes. Officials say that the "normally over 75% of throughput will be in the selected range of sizing." The mill is of the non-clogging design. Check No. 6763 on the coupon and mail it to secure details.

No. 6757—Truck Applicator

The Broyhill Co. has announced details of its truck applicator for complete analysis fertilizer solutions. Company officials state that the unit has been field tested during the past two years. The unit, claims the company, can: Transport one to three types of solution in the 3-compartment, 1,000 gallon steel tank; be easily and quickly removed from the truck; apply up to 200 acres a day; spray a uniform 30-ft. swath; transfer solution from truck tank to other field applicators; and transfer solution from storage tank to truck tank at the rate of 100 GPM. Secure details by checking No. 6757 on the coupon and mailing it to Croplife. Please print or type name and address.

No. 6753—Preblender

Drawings and literature describing the "preblender-ammoniator-granulator" (patent pending) manufactured by Fertilizer Engineering & Equipment Co., Inc., are available. The company announces that "this new approach to pre-mixing of all materials before ammoniation yields quality product and reduces formation of chloride fumes." Secure further information by checking No. 6753 on the coupon and mailing it to Croplife.

No. 7038—Automatic Bag Release

A new automatic bag release converts "G-73 Impackers" (or any bagging scale with a universal air-operated bag holder) to automatic oper-

Send me information on the items marked:

- ☐ No. 6753—Preblender
- ☐ No. 6754—Drums
- ☐ No. 6755—Brochure
- ☐ No. 6756—Weed Killer
- ☐ No. 6757—Applicator
- ☐ No. 6758—Residue Booklet
- ☐ No. 6759—Movie
- ☐ No. 6760—Folder
- ☐ No. 6761—Concentrate
- ☐ No. 6762—Pump
- ☐ No. 6763—Granular Mill
- ☐ No. 6764—Conditioning Agent
- ☐ No. 6765—Tank
- ☐ No. 6766—Movie
- ☐ No. 6767—Publication
- ☐ No. 6768—Lining Material
- ☐ No. 7038—Bag Release
- ☐ No. 7057—Bag Closer
- ☐ No. 7063—Vibrator

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COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

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No postage stamp necessary if mailed in the United States

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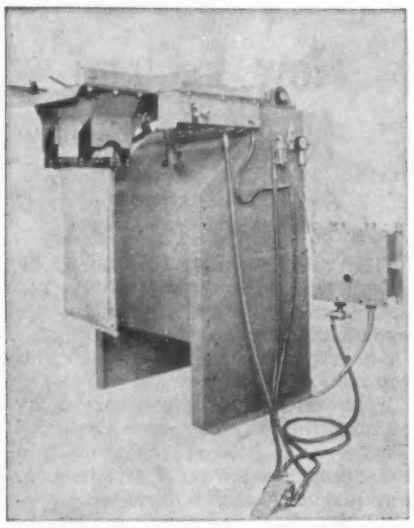

ation, it has been announced by the Richardson Scale Co. The unit is designed for textile and paper wall bags and can be supplied as an optional feature on new equipment or adapted to "Impackers" and scales already in use. For more information check No. 7038 on the coupon and mail it to this publication.

No. 6759—Soil Treatment Movie

A new sound-and-color 16 mm. film which portrays how soil fumigation increases crop yields has been produced by the Stauffer Chemical Co. Prints are available on loan, and without charge, to interested agricultural groups. The 12-min. film depicts, in actual field scenes, modern methods of applying liquid soil fumigants such as "Vapam." It also includes a series of problem-and-solution sequences which show how soil fumigation has been used to control pinkroot (onions), fusarium wilt (gladioli), oakroot fungus (fruit trees), nematodes (vegetable acreage) and weeds and soil pests in seed beds. One section of the movie portrays how trees planted in fumigated soil grow measurably faster than those set out in untreated soil. Details about securing the film may be obtained by checking No. 6759 on the coupon and mailing it to Croplife.

No. 6754—Rubber-Lined Drums

Specifications for the "series 800" and "series 801" rubber-lined drums of the Industrial Division, Gates Rubber Co., have been outlined in a new leaflet. Dimensions of the drums and other facts are given. Check No. 6754 on the coupon and mail it to secure the leaflet. Please print or type name and address.

No. 6755—Weed Control Product

A new brochure describing "Penco Penite-6X," a product used for control of weeds, trees, stumps, potato tops, aquatic weeds and termites, has been released by Pennsalt of Washington Division, Pennsalt Chemicals Corp. The brochure includes a description of the product, its composition and directions for using it for various controls. Secure the brochure by checking No. 6755 on the coupon and mailing it to Croplife.

No. 6758—Pesticide Residue Booklet

Hazleton Laboratories has produced a booklet entitled, "Growers' Service Pesticide Residue Analysis" which discusses residue problems. Instructions and suggestions for using the firm's services are explained. Secure a copy of the booklet by checking No. 6758 on the coupon and mailing it to Croplife.

CONNECTICUT BULLETIN

NEW HAVEN, CONN.—The Connecticut Agricultural Experiment Station recently published a new bulletin entitled "Fertilizing Connecticut Tobacco."

OVER THE COUNTER

(Continued from page 9)

agreement and based on some anticipated income that will enable him to pay.

"4. Button-up your agreement with a post-dated check or a series of post-dated checks.

"5. Take a note or a series of notes if you cannot get a check.

"6. Secure a chattel mortgage when possible.

"7. Endeavor to arrange with the bank to loan the farmer the operating capital necessary to permit him to pay promptly for his needs.

"8. If it is the best deal you can make, take produce, grain, livestock or anything else that is available.

"9. If you are convinced your customer is a deadbeat, let him know that you are prepared to take legal action and then do it if he forces you to.

"10. Never let your debtor put you off. That is the first sin of trying to make a collection. Any past due account is worthy of insisting on some definite arrangement before you leave."

Experience of a Dealer

One dealer recounts his experience in establishing a credit policy. By establishing the policy and sending out letters announcing the policy to 1,000 customers, the dealer was able to reduce his accounts receivable by $20,000 without losing any business. He said that now his customers know what his terms are, and he does not feel that he created any bad will by doing it the way he did.

"A Christmas letter of appreciation signed by all employees did more than anything else to create good will and hold down negative reaction to the credit letter," he says.

One experienced credit man says that the use of a mortgage was a sound practice. Making the mortgage for the entire amount of anticipated product usage is permissible, he said, because no matter what the amount of the mortgage, a farmer is liable for only the amount of supplies he received on credit.

The use of post-dated checks as a collection tool is given sanction by many experts, although it is suggested that the check be used only for deposit, not for endorsing over to others. A weakness of this method is that the dealer does not have the same legal recourse as with a check written against insufficient funds.

Charging of the full legal interest rate on past due accounts is recommended by Mr. Elmore so that the farmer has incentive to go to his baker for a loan at a lower interest rate.

New California Registrants Listed

SAN FRANCISCO — Sixteen new registrants have filed with the California Bureau of Chemistry to sell commercial fertilizers in the state since March 17.

These include nine firms in northern California, four in the southern half of the state, and three from out of state, among which are Comar Industries of New York; Forward House Division of the Olin Mathieson Chemical Corp., Little Rock, Ark.; and the Franklin Metal and Rubber Co. of Hatboro, Pa.

In addition, seven firms registered to sell agricultural minerals, including five in northern California and two from other states. One of the latter group, Nursery Stock Exchange of Casa Grande, Ariz., is listed only as a name change to Ralph's Ironite Co. New auxiliary plant chemical registrants total eight, including two in northern California, three from southern California and three from other states.

Extension Service Must Meet Farming Changes, Report Says

EAST LANSING, MICH. — "The federal cooperative extension service has and must have a dynamic program—one constantly being modernized to keep pace with the ever-changing conditions facing the people it serves."

So stated Dr. Paul A. Miller, of Michigan State University, in a new national study of the cooperative extension service. Dr. Miller, head of the M.S.U. cooperative extension service, was chairman of the study committee of the national Association of Land Grant Colleges and Universities.

"In face of mounting requests for educational assistance from a greater number of groups, a major operational problem of extension is how to allocate its time and resources," Dr. Miller declared. "Its resources are not unlimited so there is a need for focusing on certain areas."

Areas which are proving to be of wide interest include home gardening, lawns, flowers, homemaking, nutrition and the general area of processing and marketing food and fiber products, the director stated.

Although extension's first responsibility is to farm families, Dr. Miller said, others cannot be ignored. "Many people are interested in the results of research from our public research laboratories. Knowledge and applications of the findings by all can and should be of direct benefit," he said.

"Farms are larger and fewer, off farm influences have become more numerous and more forceful, population has grown and its makeup has changed, and interest areas of farm people have broadened."

In viewing the current study, Dr. Miller emphasized that the major function of the cooperative extension service is its responsibility to farm families. "This was stated in the Smith-Lever act of 1914, but one consistent characteristic of extension work has been the necessity to shift programs and methods to meet changing conditions and demands," the Michigan director said.

American Cyanamid Lowers Chemical Price

NEW YORK—American Cyanamid Co. has announced a reduction in the price of Aero cyanuric chloride. The change, effective June 16, is 15¢ lb. on carload and truckload quantities and 20¢ lb. on less than truckload quantities. Henry C. Milton, manager of the firm's manufacturers chemicals department, said that applications for the product are growing in several fields, including agricultural chemicals.

Croplife *Want Ads . . . Get Results*

. . . way out in front

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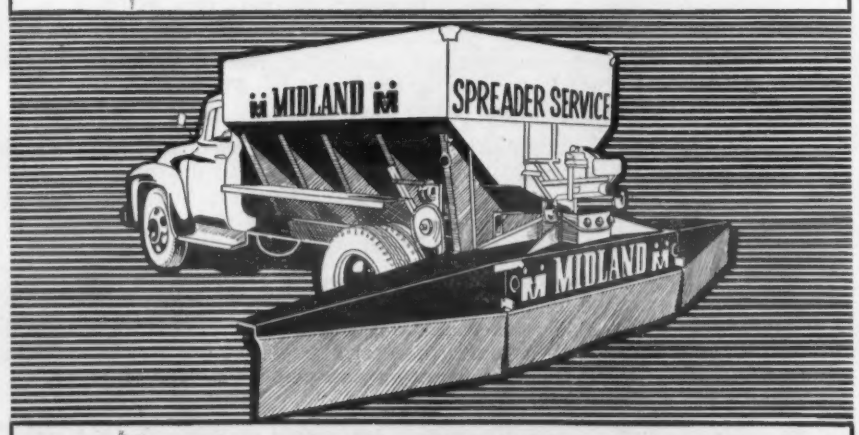
Fertilizer Spreader

Year after year, Simonsen engineers are constantly making every effort to design a better spreader. As a result, old methods have become obsolete compared to the new modern advancements of the Simonsen Fertilizer Spreader.

It is the most accurately spreading piece of equipment in America today.



Check these Up-to-date features that place SIMONSEN way out in front

- Hydraulic fan drive.
- Stainless steel apron and parts.
- Compartment hinges on the outside.
- Boom shock absorbers.
- Greaseless bearings.
- Better weight distribution.

Keep ahead with Simonsen . . . write for more details about the Spreader that's WAY AHEAD.

S SIMONSEN MANUFACTURING COMPANY

DEPT. C QUIMBY, IOWA

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Fertilizer consumption in the U.S. and possessions totaled 22.7 million tons in the fiscal year ended June 30, 1957, the U.S. Department of Agriculture reported. This was an increase of 515,041 tons, or 1.7%, over the use the previous fiscal year.

Mass DDT spray projects got a clean bill of health in a decision following a U.S. District Court trial in Brooklyn. Action had been brought to restrain the mass spray projects, and plaintiffs charged that such sprayings of gypsy moth were injurious to health, property and wildlife. Walter Bruchhausen, federal judge, said in his decision that mass DDT spraying did not live up to these charges.

Approval by the Senate judiciary committee of the Kefauver-Patman amendment to the Robinson-Patman Act was given recently. The provisions of the bill cover only food, drugs and cosmetics which would be used in human food or applications. Adoption of the act would deny to manufacturers the defense that reductions in price resulted from a competitive situation.

Synthetic anhydrous ammonia output in April was less than it had been the month previous, according to the Bureau of the Census. April production was 329,837 tons as compared to 339,015 tons in March.

Jacob White was named president of the Nitrogen Division, Allied Chemical Corp., New York. Mr. White, who has been associated with Allied since 1921, succeeds Hugo Riemer in his new position. The new president was advanced from the office of vice president.

Federal, state and local agencies were fighting a major grasshopper outbreak in the Southwest states. In some areas it was described as the worst plague since the 1930's . . . On the eve of the annual meeting of the National Plant Food Institute, industry leaders told Croplife that they generally were optimistic about overcoming the slow fertilizer start caused by cold, wet weather this spring.

At the convention speakers explored ways and means to alter farmers' attitudes and practices regarding use of plant foods. It was generally concluded that soil tests, farm demonstrations, alert retailers, a broad program of education and adequate credit are the principal factors to bend the fertilizer use curve upwards.

Plant nutrient supplies for 1957-58 fiscal year are adequate, but still down 2% from the past fiscal year, the U.S. Department of Agriculture reported in its annual "Fertilizer Situation" compilation distributed early in June. An estimated 6,506,000 tons of nitrogen, phosphate and potash are available for domestic fertilizer purposes in the fiscal year ending June 30, 1958, the report said.

The National Cotton Council forecast a critical situation for the cotton industry unless changes are made in existing federal farm legislation during the current session of Congress. A spokesman said that rules must be changed to allow production of adequate supplies of cotton at competitive prices to compete in world markets.

Federal Land Banks reported an unusual level of farm loans to enable farmers to purchase new equipment. This fact is regarded as being a good omen for the fertilizer and pesticide industries, since the investment in more efficient machines must be matched by greater productivity from the soil.

A bill to remove the 3% federal tax on rail freight was not given a very long chance of success in the Senate early in June. The bill, introduced by Sen. George Smathers (D. Fla.) had formidable opposition in the administration's reluctance to grant any reduction in taxes in 1958.

Maurice H. Lockwood resigned his position of vice president of International Minerals & Chemical Corp., in charge of the Plant Food Div. John D. Zigler became general manager of the division.

The Senate Interstate Commerce Committee approved and sent to the Senate a floor bill which would have a marked effect on the use of private carriers engaged in hauling agricultural commodities in return haul loads in interstate commerce. The amendment will be fought by the association of private carriers, but has the support of railroads and trucking associations.

The National Cotton Council advocated a program for cotton that would give individual farmers a choice between higher acreage and a lower price or lower acreage and a higher price. The program would compensate for the "large margin of error which is inherent in forecasting production, consumption and exports a year or more ahead," the Council said.

Work at the USDA agricultural research center at Beltsville, Md., may uncover information about regulating the kind and amount of fertilizer to use for maximum effect on insects and mites as well as for a maximum crop. Early studies show possibilities in this direction.

Cooperative Farm Chemicals Assn. announced plans for major additions to its nitrogen plant at Lawrence, Kansas. Cost of the expansion was estimated at $5 million.

Production of superphosphate and other phosphatic fertilizers from July to March, was up 5% over the same period of the previous year. The Bureau of the Census reported that tonnage for this nine-month period was 1,820,223 tons against a tally of 1,740,440 tons the previous year.

Congress was preparing legislation to provide funds for research on the effects of pesticides on wildlife. Government officials hailed the move as being one of the most constructive to come about in years, in bridging the gap between the USDA and the Department of Interior caused by misunderstanding in seeking ways to gain common ends.

Two new pesticide plants were completed in May. One, operated by Arizona Fertilizers, Inc., Phoenix, is located at Willcox, Ariz.; the other, by General Chemical Division, Allied Chemical Corp., is in Minneapolis.

Chemical Weed Control In Orchards Tested In New York Plots

ROCHESTER, N.Y.—A growing interest in chemical weed control in orchards has been demonstrated at meetings at two demonstration plots in Monroe County. One of these was at the Neil Elliott orchards.

Trees used in the plot were set out in the fall of 1956, Richard L. Norton, associate county agricultural agent in charge of fruit, said as he introduced Dr. Elwood G. Fisher, Cornell pomologist, who pointed out the comparisons to be studied. These covered fumigation versus non-treatment, sod as against tilled management, mulch and no-mulch.

For years fruit men have been troubled by the labor and expense required to keep down rank growth of grass and weeds particularly around the collar of the tree. The College of Agriculture and Cornell scientists have set up trials in the fruit growing counties where for the first time this year demonstrations can be given.

Some areas of Mr. Elliott's orchard were covered with weed- and grass-killing chemicals, lanes as well as underneath the tree being spread. Others showed treatment only around the collar of the tree. Mr. Fisher said the practice could come to that of putting chemical just under the tree and keeping the lanes mowed by use of a rotary mower.

The chief reason growers don't want weeds and grasses in the orchards is that these forms of vegetation compete with the fruit trees to too great an extent. When cultivation methods are used to minimize the weeds and grass, the root systems of the trees are damaged and the practice tears down the soil. "This is not so with chemical treatment where the area is non-tilled," Mr. Fisher asserted. He said the chemical treatment has been in vogue in California citrus groves since 1920 and is used on much of the area.

"They've found that the yield increases as compared with cultivated plots. This is proving so over in Wayne County where this is the third year of a test. We've got a better set of fruit this year, better tree growth," he concluded.

James W. Dayton Retires

AMHERST, MASS. — Thirty-four years of cooperative extension work —ranging from service as a county agent to his present position as state director—came to an end June 30 for James W. Dayton of Amherst and the University of Massachusetts. Starting his career in 1924 as an associate county agricultural agent in Middlesex County, Mr. Dayton started the present practice of providing spray notices and charts to fruit growers. In 1930 he became county agent in Plymouth County. In 1935 he was promoted to the position of extension specialist in vegetable gardening at the university. In 1943 he became state county agent leader, and in 1951 was named associate dean and director of extension in what was then the School of Agriculture and Horticulture, now the College of Agriculture.

DUSTERS CRASH

HARLINGEN, TEXAS—Two crop duster pilots, brothers, crashed at almost the same time, one walking away from the wreckage almost unhurt while the other died of his injuries. Albert W. Merrell, 31, was killed when his plane crashed in a grain field at the outskirts of Harlingen, when he tried a low altitude turn. He was dusting cotton. The brother, Robert, flying for the same aviation service, crashed minutes later near San Benito wrecking the ship without hurting the pilot. Both were employed by the Carden Dusting and Spraying Service at Primera near here.

New England News Notes

By GUY LIVINGSTON
Croplife Special Correspondent

The rainy weather this spring has done well for the growth of hay crops and pastures in New England, as well as cultivated crops, the New England Crop Reporting Service said at Boston.

However, since the wet soils delayed planting of some crops and cool weather has slowed the growth of corn, tobacco, tomatoes and beans, a late market season is foreseen.

Big Cranberry Crop

In spite of one of the severest drouths in history and an unusually active spring and fall frost season, Massachusetts cranberry growers raised their fifth largest crop on record. The New England Crop Reporting Service estimated the Massachusetts cranberry crop to be 585,000 barrels. This is 29% greater than the 452,000 barrels harvested in 1956 and 4% more than the 10 year average of 560,000 barrels.

Walter E. Piper Dies

Walter E. Piper, chief market investigator for the Massachusetts Department of Agriculture, died at Quincy, Mass., City Hospital. He went to work for the State Department of Agriculture in Massachusetts in 1919 as an apple inspector and later became a market investigator. He was named chief market investigator in 1947.

In addition to his state post, he appeared as a commentator on the Farm and Garden Show and other radio programs. He was a graduate of the Connecticut Agricultural College. He was past president of the National Association of Marketing Officials, Massachusetts Fruit Growers Assn. and Massachusetts Horticultural Club of Boston.

Apple Production Up

Commercial apple production in New England during 1957 is estimated at 7,610,000 bu., 52% more than the light crop of 1956 and 11% above the 1946-55 average. The Federal Crop Reporting Service for the first time inaugurated apple crop estimates by varieties.

All major varieties except Baldwins, contributed to the large crop of 1957. McIntosh production at 4,471,000 bu. was up 69% from 1956 and 18% above average. Cortland production was estimated to be 580,000 bu., up 61% over 1956, and 40% above the 1946-55 average. The Delicious crop was estimated at 606,000 bu., up 130% above the very small crop of 1956 and 62% above the 1946-55 average. Northern Spy production for 1957 was 58% above the 1956 crop, and 8% above average. It was estimated at 282,000 bu.

Being an off-year for Baldwins, production of this variety at 749,000 bu. was 23% below the 1956 crop and 23% below average.

HONORED FOR SERVICE

SACRAMENTO—John P. Long of Courtland, Cal., has been honored by the Shell Chemical Corp. for the completion of 25 years service with the firm. Mr. Long, a senior technical salesman in Shell's ammonia division in the Sacramento district, received an inscribed watch and a service emblem.

OPEN HOUSE

MEDFORD, ORE. — The Monarch Seed & Feed Co., one of the pioneer firms in southern Oregon, recently held open house as it celebrated its 48th anniversary in business. Founded in 1910 by the late Leo T. Miksche, the firm has been controlled by the Miksche family ever since.

FARM SERVICE DATA

Extension Station Reports

In progress since last April, work soon will be completed at Penn State University on next year's edition of the Agronomy Guide. Again the Guide will be devoted to recommendations on lime and fertilizer and on crops, including forage, small grains, corn, potatoes, tobacco and fine turf. It includes, also, suggestions on rotations, planting and production.

Frank G. Bamer, chairman of agronomy extension, said some 50,000 copies will be printed and distributed to farmers at their request, starting next fall at another of the annual series of district agronomy meetings throughout the state.

Following preliminary conferences for drafting tentative formulations, six industry-agronomy teams have been working on the final recommendations. These are based upon findings in research, the observations of extension agronomists on farm needs, available farm supplies and industry's capacity to produce. Industry representatives include members of the new Pennsylvania Plant Food Educational Society, seed dealers and other related organizations. They cooperate with the university in a voluntary advisory capacity.

★

With pea enation mosaic the most prevalent virus disease affecting processing peas in western New York often resulting in serious losses, Cornell scientists at the experiment station at Geneva have been studying sources of infection and transmission of the disease and have now issued a report on their findings.

Several annual and perennial legumes commonly found in pea-growing areas have been found to be susceptible to PEMV, as the virus is called, in greenhouse tests. Among these, common and hairy vetch proved to be especially susceptible to infection, with yellow and white sweetclover less so. Alfalfa, wild white clover, Ladino clover, and alsike clover were infected in only a small percentage of the greenhouse trials.

Field observations, however, led the station workers to regard alfalfa, vetches, and white clover as the most important overwintering host of the virus in western New York.

Feeding of the pea aphid has been shown to be the means by which PEMV is transmitted, the insect moving into pea plantings from nearby overwintering host plants infected with the enation virus.

"In the transmission of the pea enation mosaic virus from pea to pea with the pea aphid, the minimum feeding period required for the aphids to acquire the virus was two hours," say the station scientists. "Five minutes feeding by infected aphids was sufficient to produce infection in peas," they continue, "and the minimum total transmission period was 24 hours."

★

Spraying corn will save at least one time-consuming weed cultivation and corn will be cleaner and will produce more, says Dr. T. R. Flanagan, Vermont Agricultural Experiment Station agronomist.

"It's quicker to spray out weeds because you can cover six or more rows at faster speed," he says. "It's cheaper to spray because less gasoline and man hours of labor are required. The chemical costs can be as low as 35¢ per acre.

"Weed control is important because common pigweed uses almost three times more water than corn. Mustards and some other weeds require much more nitrogen, phosphorus and potash than good crop plants. Your corn will be robbed by these weeds.

"Last year some 5,800 of our 57,000 corn acres were sprayed to control weeds. Fully half the corn is weedy. About 20,000 acres more should be sprayed this year."

★

Damage to the seed coat or pericarp of corn can result in poor stands in the field if soil temperatures fall below 50° F., according to Willard F. Crosier, Cornell seed analyst at the experiment station at Geneva.

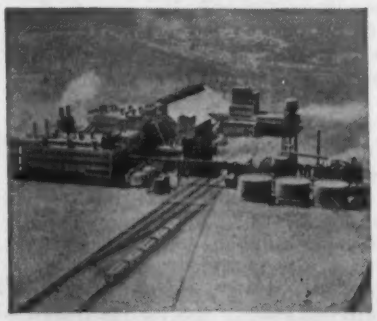
Dr. Crosier reports on observations on the effect of pericarp injury to seed corn in the current issue of the station's quarterly, "Farm Research." The studies are part of a cooperative research project with plant disease specialists at the College of Agriculture at Ithaca who are concerned particularly with effect of various seed treatments on the stand of corn in the field.

"In warm, reasonably moist soils, almost any variety of corn even with numerous pericarp injuries and without the protection of a fungicide seed treatment will produce good uniform stands in the field," comments Dr. Crosier.

"But if the soil temperature is below 50° F., as often happens during the corn planting season in New York state, soil fungi develop faster than the corn embryo. These fungi may then enter through openings in the seed coat and consume the food stored there for the embryo, resulting in its death."

QUOTE

"Perhaps the greatest change in fertilizer use in Wisconsin has been the trend toward higher analysis fertilizer. Along with more nearly adequate fertilization for crops has come the use of granulated fertilizers. For the next 10 years fertilizer usage should more than double, using higher analysis, more soluble plant foods to give farmers greater profitable yields per acre."—K. C. Berger, Department of Soils, University of Wisconsin.



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Forage Trials Unlocking Door to Greater Output on Southwest Pennsylvania Land

UNIVERSITY PARK, PA.—Forage fertility trials were of interest to advisory committee farmers, county agents, soil conservationists and industrialists from 20 Pennsylvania counties attending a recent tour of the new Southwestern Field Research Laboratory in Westmoreland County, Pennsylvania. Over 200 experimental plots of forage legumes and grasses, and small grains are now being tried for the second season.

Different levels of fertilizer are a major area of study at the field lab, as explained by Lawrence F. Marriott, soil technologist at Pennsylvania State University. Dr. Marriott said heavy use of phosphate has improved growth of legumes, indicating that the land is low in phosphate.

"Standard applications of 300 lb. of 5-10-10 per acre are not enough nitrogen for the area," Dr. Marriott stated. "We had very little growth with standard fertilizer rates this spring, although the forage was green," he added.

Work with forage varieties is aimed at determining yielding ability and seasonal productivity of land in southwestern Pennsylvania. The field laboratory is operated by the Agricultural Experiment Station at Penn State.

Dr. Marriott pointed out that plots are fertilized with three rates of commercial fertilizer. For example, S-37 orchardgrass is given nitrogen applications of 50, 100 and 200 lb. per acre.

Work will continue on testing blast furnace slag, calcium silicate, for use in place of lime to correct soil acidity. Research funds in a grant from U.S. Steel Corp. will be used to determine how much slag is needed to equal a given amount of lime. Research will determine what effect slag has on phosphates in the soil.

Studies will also show whether slag has any other important effects that lime doesn't have. This work will be expanded to include two farms in Westmoreland County and two farms in Washington County, in addition to laboratory testing in greenhouses on the Penn State campus.

A farmer advisory committee is consulted on projects to see that the research meets the agricultural needs of the 11 southwestern Pennsylvania counties. Each county is represented on the committee.

"Within a couple of years we hope to have a better idea about the feed producing potential of land in the southwestern area," said Howard B. Sprague, head of the department of agronomy at Penn State.

Dr. Sprague pointed out that it is often difficult to get forage seedings established in the area. Because of seeding problems, southwestern Pennsylvania farmers have traditionally planted timothy in the fall with winter wheat and overseeded this with clover in the spring. Research is needed to determine best varieties, seeding mixtures, and time of seeding for legumes and grasses such as birdsfoot trefoil, alfalfa, Reed canarygrass and orchardgrass.

Variety trials were described by Henry R. Fortmann, assistant director of the Agricultural Experiment Station. Plantings include orchardgrass, timothy, alfalfa, red clover, birdsfoot trefoil and ladino clover.

Dr. Fortmann pointed out the early maturity of Potomac and Common orchardgrass. Both were well headed out as of May 22. Pennlate, developed by the Pennsylvania Agricultural Experiment Station, was the best of the later varieties.

So far Viking, Mansfield and Granger are much the best varieties of birdsfoot trefoil, Dr. Fortmann reports. There was virtually no stand of swamp or big trefoil. Vernal and Du Puits alfalfa were outstanding. Pennscott and Chesapeake were the best red clovers. Dr. Fortmann says ample supplies of Pennscott red clover are available in the state.

The effect of different management practices on yield and survival of grasses over the growing season will be watched. Three and four harvests a season will be made of 11 grass varieties. The testing will also determine which varieties of grasses and legumes make the best combination.

First harvest of the 11 grasses will be made this year. Grasses included are Pennlate, Potomac, S-37, Common orchardgrass, Climax timothy, Saratoga and Lincoln bromegrass—all fertilized with commercial nitrogen. These grasses will also be tested in association with Du Puits and Vernal alfalfa and in combination with Ladino clover and Narragansett alfalfa.

"We want to know how the vigor of Du Puits and other alfalfa will stand up in combination with different grasses," Dr. Fortmann noted.

With Dr. Fortmann working in administration, forage breeding projects at the Southwestern Field Research Laboratory will be carried out by Richard W. Cleveland, assistant professor of agronomy, James L. Starling, instructor, and Richard H. Cole, graduate assistant.

John B. Washko, professor of agronomy, reported successful establishment of birdsfoot trefoil and ladino clover from spring seedings despite the midsummer drouth last season. These two legumes were planted with six grasses, the best of which were Pennlate and Common orchardgrass, Lincoln bromegrass and Tualatin tall oatgrass. These grasses will be harvested at the early bloom stage, twice during the summer, and the various grass-legume combinations will be compared for forage production.

Dr. Washko also described trials of small grains and winter annual grasses. His small grains plots showed that rye varieties produced more forage than winter barley and winter wheat. Winter oats, field bromegrass and domestic ryegrass were somewhat inferior in yields.

Small grains will be compared for both forage production and grain production. Winter grain yields will be tested after early spring cutting to see what effect clipping will have on grain production. Previous research indicates a combination of small grains for forage and grain production is better than small grains for grain alone on a TDN per acre basis.

Southwestern Pennsylvania has a problem of establishing seedings on all soils that drain slowly in spring. Dr. Washko will seed forage species each month throughout the growing season to determine the best periods for successful seeding. He will include combinations of alfalfa-bromegrass, ladino clover-orchardgrass, and birdsfoot trefoil-timothy.

The problem of establishing Reed canarygrass is so acute that one plot will be devoted entirely to growing this forage, it was announced.

Fall planted winter annuals are being tested to determine potential forage production under southwestern conditions. Winter barley seems good, Dr. Sprague said, and Seneca wheat was also good. There is still the problem of getting feed off the land and into cows, since the land is usually too wet for grazing in the spring.

Vegetable crops will also be tested at the southwestern Pennsylvania laboratory this season. Planted are 17 sweet corn hybrids, 12 tomato hybrids, and 10 lettuce strains. In charge of the vegetable experiments is Bernard L. Pollack of the department of horticulture. Dr. Pollack says future plans call for experiments with melons, celery, peppers, cucumbers and squashes.

Cole crops are being planted for fall harvest—cabbage, head lettuce, broccoli, brussels sprouts, and cauliflower. Vegetable specialists claim there is a good market in southwestern Pennsylvania for cole crops after the southern market season is finished and before northern markets are ready.

It is believed that cole crop vegetables would work well with grassland farming in southwestern Pennsylvania. Such vegetables would give longer season use of land and would provide a high income cash crop for the area. Cole crops could serve as the rotation year of clean cultivation in establishing new grasses.

ILLINOIS DEALER

(Continued from page 9)

and specialized, the farmer has need for many more products, and we can serve him through our farm supply store," states Mr. Campbell. "We are constantly looking for related lines that we can add."

Last year the store modernized its mill, and this step increased mill traffic. Much of the mill traffic finds its way into the farm supply store.

Some newspaper advertising is done, and occasional direct mail is used, reports Mr. Campbell. The store also uses manufacturers' signs and literature to good advantage in its farm supply store. Folders, especially, are made handy for customers to pick up and take home.

Collections have been quite good this year. Many farmers who buy items at the farm store pay cash for them, but are inclined to charge their larger purchases. By keeping a close watch on accounts, however, and by reminding delinquents about paying, Mr. Campbell and his staff manage to keep outstanding accounts at a low level.

Because Illinois farmers like to shop six days a week, the store is open from 7 a.m. until 5 p.m. every day, including Saturdays. The mill and store are located close to the busy Mattoon downtown section. Mattoon is considered one of the better agricultural trade centers in the state.

PROFITABLE COMBINATION—Shown here is the Niemeyer Farm Store, Mattoon, Ill. The store, in the foreground, combined with a custom mill, at the rear of the store, make a profitable enterprise for the Illinois firm. The farm store last year accounted for 26% of the profits. Growth of the mill also brings growth to the store, according to Forrest Campbell, manager.

Gloomicides

Here lies the body of William Brace;
He sure was one fine fella,
He said in his sleep: "I love you, Grace,"
But his wife's name was Stella.

★

Husband to wife: "What do you say we take this money we've saved toward a new car and blow it on a movie?"

★

I think my premise is correct:
Considering ways and means,
There's a different, over-all effect
When women put on jeans.

★

An Irishman was sitting in a station smoking, when a woman came in, and sitting beside him, remarked:

"Sir, if you were a gentleman, you would not smoke here!"

"Mum," he said, "if ye was a lady ye'd sit farther away."

Pretty soon the woman burst out again:

"If you were my husband, I'd give you poison!"

"Well, mum," returned the Irishman, as he puffed away at his pipe, "if you wuz me wife, I'd take it."

★

In the window of a department store: "If you need it, we have it." In the window of another store across the street: "If we don't have it, you don't need it."

★

A genealogist was seeking to find why a certain man in the hill country had lived so long past the 100-year mark. When he reached the old man's cabin in the hills he found him lying in a hammock under some pine trees. The answer was soon learned when the genealogist asked the man to what he attributed his long life. Said the old man, "Just simple takin' advantage of the Lord's blessings. He gives us the night to sleep in and the day to rest in."

★

Didja hear about the wonderful island they've just found in the South Pacific? There are no taxes, unemployment, crime, police, beggars, disease, divorces, wars, arguments—or inhabitants!

★

An old millionaire invited his three sons and their wives to a Sunday dinner. As they sat down at the table, he explained his reason for bringing them all together. "I am getting old," he said, "and yet I have not made out my will. Why? Because of my disappointment at not yet being a grandfather." He said he planned to make his will and as a bonus, he would give $50,000 to the first grandchild.

Then he bowed his head and asked the blessing. When he looked up he found he was the only one left at the table.

MOSQUITO DRIVE

(Continued from page 9)

weather conditions," Dr. Gerry said. "Last year being one of the driest on record, the insect problem was less severe and money could go for ditches and draining. This year we will have to reverse the method and use spraying procedures."

Mosquito control projects are ranging from Cape Cod to Essex County and Cape Ann. The latter is not yet on a state-wide basis although a bill is before the legislature which calls for a project to be established there. Once passed, the project will then blanket the Massachusetts coast.

Leading recreation centers have well organized mosquito control projects in Nantucket, Berkshire County, Plymouth County and the South Shore. Norfolk County, including the Charles and Neponset rivers, also has its own project. In addition, an Eastern Middlesex Mosquito Control Project was formed to service the communities of Melrose, Wayland, Weston and vicinity where extensive housing units have been built.

Compared to other states working to combat the insect plague, Massachusetts might be listed below New Jersey, which pioneered in mosquito control measures, California and Florida.

During the winter months, men working on the various mosquito control projects exchange ideas and work out experiments in an organization known as the Northeastern Mosquito Control Assn. of which Mr. Wells is president. Trained work crews know where most of the major mosquito infested regions are located and spraying or ditch procedures are set up for the area.

Another Massachusetts pest, the greenhead fly, is considered minor this season, mainly restricted to the seacoast. Still another, ticks, are reported less troublesome than mosquitoes. Research has been underway to erase the ticks on Martha's Vineyard and Cape Cod. The research information has been passed on to the cities and towns to use independently or as they see fit.

Buys Elevator

NEWTON, KANSAS — Dannen Mills, St. Joseph, Mo., has purchased the First Street Elevator here from Bernard and Vince Gatz and Frank Oliver. Announcement of the purchase was made by Ed Godsey of Newton, territory manager for Dannen, and Eugene Packwood of St. Joseph, manager of the firm's country station division. The elevator here will continue to handle grain, feeds, seeds and fertilizer. Donald Drummond of Belton, Mo., is manager of the elevator temporarily until a permanent manager can be named.

CONSERVATIONIST NAMED

WASHINGTON — Appointment of Harry M. Chambers of Stillwater, Okla., as territorial conservationist for the U.S. Department of Agriculture Soil Conservation Service in the Caribbean Area has been announced. Mr. Chambers, who has been deputy state conservationist for SCS in Oklahoma since 1954 and an employee of the agency since 1935, will be headquartered at San Juan, Puerto Rico. He will administer SCS technical services to 19 soil conservation districts in Puerto Rico and the Virgin Islands. He succeeds Richard L. von Treba, who is retiring.

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Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

It was mid-morning on a rainy spring day. In the railed-in office section of the Schoenfeld & McGillicuddy farm supply store, Oscar Schoenfeld sat at his desk figuring discounts and costs. His back was as straight as a ramrod, and his pot barely rubbed the edge of his desk. In a neat row were six sharpened pencils. Nearby, too, was a green plastic bulldog, its big open mouth filled with paper clips which Oscar had retrieved. On one corner of the neat desk, too, was a glass fishbowl filled with retrieved rubber bands. Nearby was a sizable 8-ball, while on the wall was a sign in which Oscar took pride.

The sign read: "You here again? There's another half hour shot to——"

Glancing at the stern Oscar, the ramrod back, the pot, the sharp pencils and other desk ornaments, all in order, strangers, salesmen and also customers got a pretty clear indication of various facets of Oscar's character. In fact, Oscar was famous locally for his frugality and a few other things, although he never dreamed he was a source of news.

Now Oscar glanced across at Pat McGillicuddy's desk, where his lanky, blue-eyed Irish partner sat perusing magazines and agricultural booklets. The desk was piled high with letters and magazines and the sight of this seeming disorder always sickened Oscar.

"Ach, are you going to sit all day looking at magazines?" Oscar finally blurted. "Why don't you clean your desk? Burn all those magazines. They are no good."

Pat looked up astonished. In his right hand was a piece of paper on which he had written something. "That's where you are wrong, Oscar," he said slowly. "The fate of our business lies right on my desk, in those magazines, in those agricultural college reports and the other brochures."

Oscar frowned puzzledly. "Himmel, are you sure you feel okay today, Pat? Ach, I don't believe a wordt you say. How can our business be tied up with that junk all over your desk?"

A steely look came into Pat's blue eyes for a moment. "Oscar, this business can get along without your sharp pencils, your paper clips and rubber bands and also your eight ball, but it can't get along without the information that's in these magazines and bulletins on my desk."

Oscar's face got a dusky red. "Now, I know you are crazy!" he snapped. "You have gone bughouse, McGillicuddy. I am in business with a fool!"

Tillie Mason, the ulcerish inclined bookkeeper got up from her desk. "There you two go again," she said wearily. "If you men spent half the time getting new business and getting in collections that you spend fighting, this would be a wonderful business. I'm going for a cup of coffee and I'll be back in a half hour. If you haven't stopped fighting then, I'll quit."

The two partners never heard her. Necks taut, eyes glaring, lips tight they faced each other like roosters with every feather abristle.

Pat took a thumb tack and banged it into the white sheet of paper which he held against the wall. "Take a look at that, you penny pincher, and tell me what you see!" he cried angrily.

Oscar gulped. "I don't see nothing, ach, but 37."

"Of course, that's all you see, because you don't read magazines and reports," Pat shouted. "That's just the trouble with you. You think you know everything about the farm supply business and that you learned it all 20 years ago."

"I know enough to see that the money gets in so you and everybody else gets paid every Saturday," thundered Oscar. "What's more important than that, dumbkopf?"

Both men were silent, and rivers of anger ran between them as they glared at one another.

"Listen, Oscar," said Pat, trying to control his voice. "This is a fast changing industry. Manufacturing, distribution, retailing methods are not static. We have to keep up with them, or we are lost."

"Well, go ahead and keep up," shouted Oscar. "Look at that list of unpaid accounts on your desk. See how much money those deadbeat farmers owe us. Ach, it will make you sick. Look how much money we have in the bank. Just enuf to pay the salaries Saturday, maybe. Look what you spendt for advertising, and stationery and calendars. Look at the light bills. You work nights and go home and leave all the lights on. You let the men leave the delivery trucks run on expensive gasoline while they stand and gossip with farmers. Himmel, YOU had better keep up, NOT ME."

Pat bit his lip. "Look. The National Plant Food Institute survey report shows that of the farmers interviewed 37% have never used fertilizer and that of those using fertilizer 52% used much less than soil recommendations. Now what does that mean to you?"

"Ach, they are the ones that don't pay their bills," Oscar burst forth. "They're deadbeats, and I'll bet you want to sell them."

"You're biased!" cried Pat. "You wouldn't get a new idea into your head even if you had a busted eardrum. That figure 37 stays on my wall. That's a daily reminder to me of the great potential there is for us to sell fertilizer. Every time I look at it it will give me a mental kick in the pants to get out and call on farmers. The business is there if we go after it."

"I will give you a kick in the pants on collections whenever you want it!" cried Oscar, his face glowing redly. "Ach and it will be a goot one, too, I can tell you."

"You and I may have our differences of opinion," continued Pat enthusiastically, "but when we read agricultural college reports, the farm journals, the trade papers, we can cash in on all the survey work and findings done by thousands of trained people who are paid by somebody else. We get all this value just by reading the papers. That's why I spend so much time reading. Only a fool won't do it."

"Okay," snapped Oscar. "Ach, I will go on being my kindt of fool. I got money in the bank. I got paid up home. I got stocks. I got bonds. What have you got—notting."

When Tillie opened the door a half hour later the partners were still taking inventory of each other in emotional terms. "Well," she sighed, "I guess I'll go back for a hot fudge sundae this time. I can't stand any more coffee."

Fertilizer Time Studies Underway at Kentucky

WASHINGTON—A $2,000 grant provided this year by the National Plant Food Institute is helping agronomists of the Kentucky Agricultural Experiment Station conduct studies to determine the optimum time to apply fertilizers to grass-legume mixtures and to small grains. These research tests are located at the Campbellsville and the Greenville Experiment fields.

The work is under the direction of Dr. E. C. Doll and A. L. Hatfield of the University of Kentucky's agronomy department. The experiments were started in the fall of 1957, and the first yields will be obtained in 1958.

Specific objectives of the research are:

(1) To determine the best time of application of mineral fertilizers for their most effective use by a grass-legume hay mixture, as measured by yields and maintenance of stands,

(2) To determine the effect of nitrogen applications made at various times on both the yield and maintenance of a desirable hay mixture, and

(3) To determine (a) the effect of time and rate of nitrogen applications and (b) the time and rate of potassium applications on the production of wheat for both pasture and grain.

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BUG OF THE WEEK

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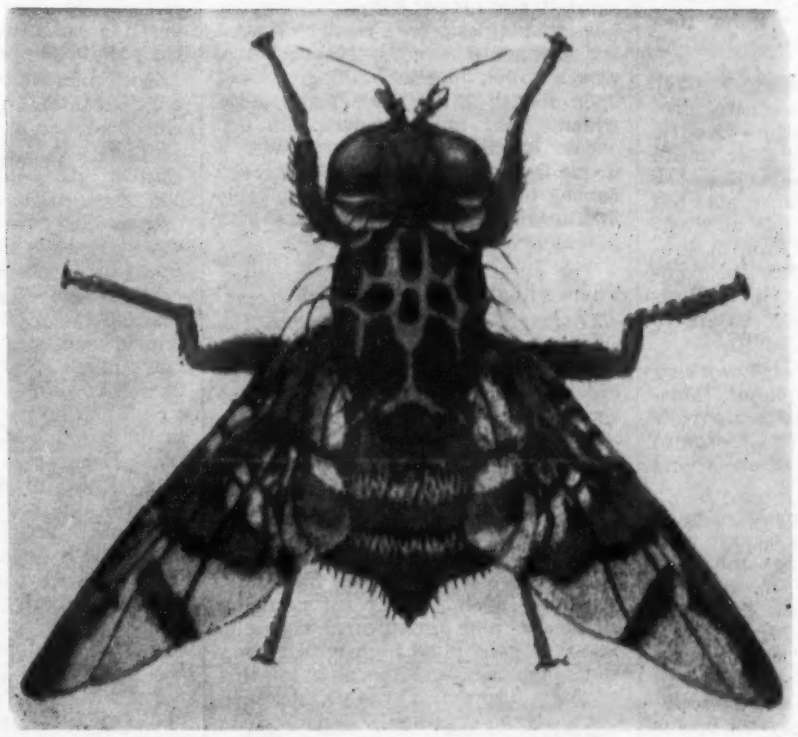
Mediterranean Fruit Fly



How to Identify

This pest is smaller than the common housefly, with a glistening black thorax and a mosaic pattern of yellowish-white lines. A yellowish abdomen with two silvery crossbands mark that portion of its anatomy, and the wings are banded and blotched with yellow, black and brown.

Life History of Fruit Fly

The eggs develop into larvae in from two to three days. The larvae feed inside the fruit for about 10 days, then drop to the ground and enter the pupal or cocoon stage. They remain just under the surface of the ground for about 10 days, during which time they become adult flies and emerge and start the reproducing cycle again. Under optimum conditions, flies may live for as long as a year, but usually, their life span is but a few months. During her lifetime, a female may lay as many as 800 eggs in batches of two or three, or as many as eight to ten. The Mediterranean fruit fly was first discovered in the U.S. in 1929, in Florida. An energetic campaign with state and federal funds eradicated the insect from a large area of the state. None had been found in the U.S. between 1930 and 1956, when it made its appearance again. Quick action and an unprecedented effort by both ground and air application have apparently succeeded in eliminating the pest from the country.

Damage Done by Pest

Maggots developing in the pulp of the fruit devour much of the substance and open the way for fungus and bacterial diseases. Egg punctures made by adult flies affect the shipping qualities of the fruit. Many kinds of fruit are attacked by the Mediterranean fruit fly. These include particularly oranges, grapefruit, peaches, nectarines, plums, apples, and many others. Its depredations could well destroy entire crops of various fruits if the insect should get out of hand.

Control of Mediterranean Fruit Fly

Unlike usual projects which have as their aim merely good control of an insect, the campaign against "Medfly" was one of complete eradication. The State of Florida was covered from end to end by some 25,000 plastic traps, baited with oil of angelica seed which attracts male flies. Quarantine of infested areas was necessary to prevent possible spread of the fly through unauthorized shipments of fruit and vegetables. Road blocks were employed at strategic points, and both single and multi-engined airplanes as well as power and hand sprayers were used in well-planned coverage of the millions of acres treated. Routine trapping along the seacoast, air and border ports, in areas where host fruits are produced, in states along the South Atlantic and Gulf Coasts and the Mexican border will be continued indefinitely as a precaution against possible re-entry of the pest into the U.S.

Illustration of Mediterranean Fruit Fly from Florida Citrus Mutual Bulletin.

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Weeds Threaten Ranges In California

SAN FRANCISCO—The spread of weeds on California rangelands is seriously decreasing the grazing capacities of those fields, according to Jack Majors, assistant specialist in botany at the University of California, Davis.

In a report to the California Wool Growers Assn., Mr. Majors stated that chemical sprays are one of three or four "musts" which should be used to control the weeds and return the rangelands to productivity. This method is particularly effective when used "on the periphery of an invasion to hold back the spread of noxious range plants."

If left uncontrolled, these weeds change the season of best range use, injure foraging animals, and make even more difficult the establishment of better varieties of forage plants, he says.

Another control method is seeding with better species and fertilization of the rangeland to develop them. Other methods are prescribed burns, and grazing management.

J. C. Kato Leaves Post at National Safety Council

CHICAGO—John C. Kato, National Safety Council staff representative in the Fertilizer Section of the Council, left his post on July 1. He has held the position of senior engineer, industrial department of NSC since 1954, and has worked closely with leaders in the fertilizer industry safety movement.

Mr. Kato had not announced his plans for the future, as this issue of Croplife went to press.

Hooker Reports Reduced Income First Half of '58

NIAGARA FALLS, N.Y.—Sales and earnings of Hooker Chemical Corp., Niagara Falls, N.Y., for the first six months of the company's fiscal year ended May 31, 1958, are slightly lower than for the same period last year, the firm reports. The figures include operating results of wholly-owned subsidiaries and of the former Shea Chemical Corp. merged into Hooker on May 29.

Net sales for the six months period were $60,155,200, compared with $63,205,200 for the six months ended May 31, 1957. Net income after federal taxes in the latest period was $5,142,000, equal to earnings of $0.69 per share of common stock, after payment of preferred dividends. This compares with net income of $5,483,100 and earnings of $0.74 per common share for the corresponding period of 1957.

Infestation Light in Rio Grande Valley

WESLACO, TEXAS—Insect infestations have been comparatively light so far in Lower Rio Grande Valley cotton, according to James A. Deer, associate county agent. The condition of the crop is good, far better than at this time in 1957, and unless growers run into severe weather or big insect infestations, good yields are in sight.

An insect condition report compiled by various agencies showed that most damage to cotton near the end of June was being caused by bollworms with heavy populations present in most fields across the Valley. Cabbage loopers attacked cotton in many fields with infestations ranging from heavy to light.

Red spiders are present in spots in a large number of fields but no severe damage has been reported. There was a gradual increase and spread of boll weevils but no sharp increase except in the Brownsville area. Pink bollworms are reported in small numbers in scattered fields, and infestations are light except in the San Benito area.

B. L. Willmore

NEW APPOINTMENT—Bert L. Willmore was elected assistant secretary of Bemis Bro. Bag Co. at a recent meeting of the board of directors. Mr. Willmore is head of the economics section of the company's general sales department, St. Louis. Before joining Bemis in 1946, Mr. Willmore was affiliated with the Office of Price Administration. Prior to this position, he was associated with the Bureau of Agricultural Economics, U.S. Department of Agriculture. In 1951 he served as consultant to the Office of Price Stabilization. Mr. Willmore is a native of Rexburg, Idaho, and a graduate of the University of Idaho.

INSTITUTE OFFICERS—Officials of the National Plant Food Institute are pictured at top, as named at the group's recent NPFI convention at the Greenbrier Hotel, White Sulphur Springs, W.Va. They are, left to right, Paul T. Truitt, re-elected executive vice president; L. Dudley George, vice president of Richmond Guano Co., Richmond, Va., named chairman of the board of directors; Richard E. Bennett, president of Farm Fertilizers, Inc., Omaha, Neb., newly elected president of NPFI, and Dr. Russell Coleman, re-elected executive vice president of the Institute.

In the lower photo are winners in the Institute's nationwide "Soil Builders' Award for Editors", a contest in which a field of 34 magazines competed. At the left is Dr. Paul D. Sanders, editor of "The Southern Planter" Richmond, Va., and at the right is W. H. Kircher, managing editor of "The Farmer" who accepted the award in the absence of Berry H. Akers, editor of the publication, St. Paul, Minn. The awards were presented by Dr. Russell Coleman (center). The contest, established in 1952, is approved by the American Agricultural Editors' Assn.

Applications of Additional Potash Found Effective in Reducing Potato Bruising

LOS ANGELES—Preliminary results of controlled potash tests on potato crops in Kern County, California, have been termed successful by University of California officials in charge of the program.

Effects of potash applications to prevent a type of physiological leaf roll and blackspot or stem end bruising in potatoes has been under study by the university for some time.

Dr. Oscar Lorenz of the university announced tentative results at a recent field day held near Bakersfield and attended by approximately 100 representatives of the chemical fertilizer industry, potato farmers and university officials.

Dr. Lorenz pointed out, however, the final evaluation would have to await harvesting and marketing of this year's potato crop.

Frank McGrane, agricultural chemicals sales manager for American Potash & Chemical Corp., said the company was "highly encouraged" by the results reported to date.

"One of the subjects under study is potash ability to prevent spoilage during transit to eastern markets," Mr. McGrane said, adding that this may run as high as 30%.

Mr. McGrane said a number of railroad cars of Kern County potatoes were rejected at eastern cities last season because of blackspot. He said tests to date indicate potash will cut down on this loss, as well as a type of physiological leaf roll.

The current testing program in Kern County follows two-year tests made in the Santa Maria and Madera (Cal.) areas in 1955 and 1956 to correct potash deficiency in crops. Blackspot in potatoes was a problem at Santa Maria, while general potash deficiency existed in both regions.

POTATO TESTS—Foliage of potato crop near Bakersfield, Calif., is examined during potash tests by Forrest Fullmer, Southwest regional agronomist of the American Potash Institute, and Dr. Kent Tyler, of the University of California at Riverside, Calif.

Canadians Told Fertility Is Answer to Erosion Problems And Key to Boosting Income

LE GITE, QUE., CANADA — With one of the highest population growth rates in Canada, Quebec is losing farms and acreage under cultivation at a faster rate than the national average, conventioneers attending the annual meeting of Quebec Fertilizers, Inc., were told. "These contrasting trends represent a real challenge to Quebec farmers," said Paul Bastien, newly-elected president of the group at its recent conference here.

The decrease in the number of farms in Canada was 7.7% between 1951-56, however the decline in total acreage was only one tenth of one per cent, he said.

During the same period in the province of Quebec, the number of farms decreased by 8.7%, but the reduction in acreage was only 5.2%, he added.

"In contrast with this shrinkage of cultivated land, population has been expanding at an average rate of approximately 120,000 a year in the past six years," Mr. Bastien pointed out. "This trend should be considered in conjunction with recent statistics on the province's ability to supply its food needs.

"Poultry marketed by Quebec farmers in 1957 was 14,810,000 lb., while total consumption was 31,155,000 lb. The difference—52%—was composed of imports.

"Egg production was 63,280,000 doz. in 1957: total consumption in the province was 113,000,000 doz. Here again, the difference—41.3%—was provided by imports."

Reviewing demand and supply of other farm products, Mr. Bastien noted that Quebec beef cattle satisfy only about 35% of the market demand. Quebec-grown potatoes constitute about three quarters of the total consumed.

"As the saying goes, 'To seize an opportunity, one must first be able to recognize it'," said Mr. Bastien. "In the present situation the opportunity for Quebec farmers is clearly evident. They must make the best use of the remaining land by making it produce more. Growing crops, whether they be grass, grain, vegetables or orchard fruits, consume nutrients from the soil. These nutrients must be replaced annually by proper fertilization if yields are to be maintained or increased. Most Quebec soils are 'hungry' because little attention has been given to putting back the important minerals required for high crop raising.

"Quebec Fertilizers Incorporated collaborates with provincial and federal departments of agriculture, agricultural colleges and agronomists to spread knowledge of these methods through forum discussions, demonstrations in various locations and through farmers' meetings.

"Through this joint effort and the help of others concerned with soil conservation, we can be assured of important advances toward the goal of lower production costs and a farming industry that is as active, profitable and efficient as any other in the Quebec economy."

"The farming industry must become more efficient or it will die," warned Dr. W. H. Garman, chief agronomist of the National Plant Food Institute in Washington, D.C., at the meeting.

"Agricultural incomes continue to lag behind others," he said. "In the U.S. since 1947, farm income has not kept pace with national income and the spread is becoming wider and wider."

Rapid increases in the wages of hired labor (the average wage has shot up about 400% since 1939), and the high cost of land are two factors which have helped to stunt the growth of U.S. farm income since the war.

Referring to a recent institute study of farming practices in the northeastern U.S., Dr. Garman said that, of those farmers who reported having plans for increasing their farm income, 68% said they planned changes in their livestock holdings.

"Although this result suggests that there is a tendency among farmers to think of livestock as a principal means of increasing income, the study brought out some interesting facts on actual variations in income of farmers.

"The average gross income per acre of crop and pasture land in 1956 was $93.54 for those farms which were intensively fertilized and only $55.98 for those which used little fertilizer."

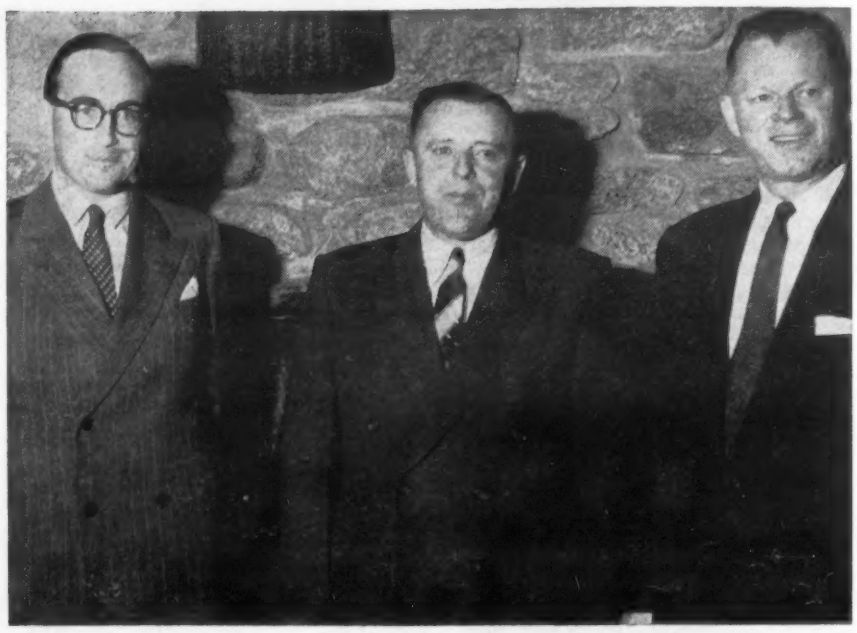
The survey also showed that the larger, better equipped farms were the heaviest users of fertilizers and the farmers who operated them were better informed on the importance of using soil tests and the proper grade and amount of fertilizer. But even among those farmers who did not fertilize their major crop in 1956, more than half of those surveyed believed fertilization would have given increased yield.

An investigation of the Lake St. John area in Quebec revealed that 395,000 out of a total of 860,000 acres of land, or 46%, were eroded.

This example was cited by Dr. Auguste Scott, head of the soils division of the Agricultural School at Ste.-Anne-de-la-Pocatiére, who spoke to the group. He said the study showed that 145,000 acres had been eaten away by water and 250,000 by winds.

In the absence of statistics on conditions in the rest of the province, the speaker said, one can easily get an idea of erosion damage by observing, while traveling through the province, how streams and rivers become muddy after rain.

Certain areas, such as Lake St. John, Maskinonge, Berthier and other counties are badly eroded, he said. The Abitibi region is probably the most severely damaged.



CANADIAN OFFICERS—New executives of Quebec Fertilizers, Inc., elected at the group's recent annual meeting at LeGite, Laurentide Park, are seen here. They are (left to right) L. E. Whitworth, International Fertilizers, Ltd., secretary-treasurer; P. E. Bastien, Canada Packers, Ltd., chairman; G. R. Blais, Canadian Industries, Ltd., vice chairman. Other officers named at the meeting but absent when the photo was taken are Ronald Olivier, William Houde, Ltd., executive director; Jean Leclerc, Canadian Industries, Ltd., agronomic committee chairman; and Real Roy, Canada Packers, Ltd., advertising committee chairman. (See Croplife issue June 23 Page 5.)

"Another striking instance of the effects of erosion can be seen in the fact that, if the tributaries of the St. Lawrence were not draining earth into the river it would not be necessary to dredge continually."

"In the province, wind causes less extensive damage than water," said Dr. Scott, "but the effects are no less disastrous."

"Producers of tobacco in the Joliette area have had bitter experiences. Forgetting that sands not protected against wind erode easily, they have had hundreds of acres of tobacco ruined."

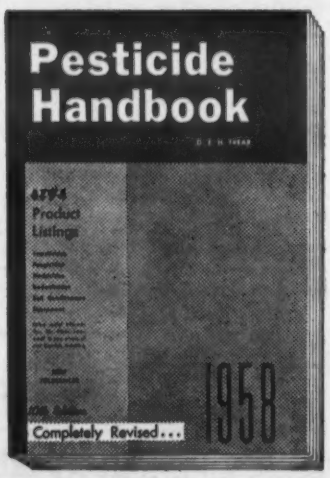
Dr. Scott warned his audience of the long-run effects of erosion, quoting a remark of H. H. Bennett, who said: "Ancient empires owed their destruction as much to loss of their soil as to the swords of their enemies."

A first step in stemming soil erosion in the province would be to make a thorough study of our soils and their fertility. More educational work should be done. The number of meteorological stations should be increased and greater research carried out.

More specifically, he suggested that fertility of poor soils and soils damaged by erosion should be increased. As ways to lessen risk of erosion, he suggested crop rotation, scattering of lime, and fertilizers. He also recommended the formation of a soil conservation organization.

New Wyandotte Plant

BATON ROUGE, LA.—Wyandotte Chemicals Corp. recently dedicated its new chemical manufacturing center south of here to "progressive service to the growing industrial south" and announced that its new ethylene oxide-glycol plant already is producing at anticipated capacity and that the output of the plant has been sold for the balance of 1958 and well into 1959. The ethylene oxide-glycol plant is the first of two chemical plants which will make up Wyandotte's Geismar Works. The first half of a 300-ton-per-day chlorine and 330-ton-per-day caustic soda plant is well under way and is scheduled to go on stream in the first quarter of 1959.



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about the editor—

Dr. Donald E. H. Frear, Editor of PESTICIDE HANDBOOK 1958, is one of the leading authorities on the chemistry of pesticides. He is the author of "Chemistry of Insecticides and Fungicides," the first book dealing with this subject published in the United States. In addition, he has written several other books, including "Chemistry of Insecticides, Fungicides and Herbicides." Dr. Frear is Professor of Agricultural and Biological Chemistry at the Pennsylvania State University.

10TH ANNIVERSARY EDITION

Constant Watch for Cotton Pests Forms Basis for Unusual Arkansas Program

FAYETTEVILLE, ARK. — The most economical and satisfactory way of controlling cotton pests is to keep a continual watch for them. This way we know definitely when we have an attack of harmful insects."

This statement by John Stephens, Crittenden County, Arkansas, county agent, forms the basis for the state's extension service cotton insect scouting service. Inaugurated back in 1949, the scouting program has been extended to 15 counties this year.

Under the scouting program this year, about 75 University of Arkansas agriculture students will spend the summer scouting the cotton fields of participating farmers. Specially trained before leaving the University, they receive additional field training from extension entomologists and county agents.

Key figures in this program are the county agents and the farmers. The farmers contact the county agents and request the scouting service. The requests are forwarded to the university and a student is assigned to the job.

Before leaving school the cotton scouts are required to attend special training classes. They learn to recognize the major insect pests of cotton and the damage caused by each, to recognize beneficial insects, how to scout cotton fields to determine levels of insect infestation, how to make insecticide recommendations and effective insecticides to use in controlling different types of insect pests.

When the students arrive for their summer work they first spend several days with the county agent learning how to put their classroom training into practical use. During the season their reports are checked periodically by the county agent and also by the state entomologist or members of his staff.

Each boy is assigned about 1,400 acres to scout. He inspects each field at least once a week. If an insect buildup or "hot spot" appears, the field is checked daily and appropriate insecticide recommendations are made when the infestation rises to the danger level.

Each student receives $900 for the season's work. All of this is paid by the participating farmers and averages about 65¢ per acre scouted. As Mr. Stephens points out, the cotton farmer more than pays for his scouting service for the entire season if he is able to avoid one unnecessary application.

Grover Dowell, Arkansas extension entomologist, says the cotton insect scouting service has proved profitable for cotton farmers all over the state. One east Arkansas cotton farmer told Mr. Dowell that the scouting service saved him $10,000 in one growing season alone.

But cost is not the only benefit of this program. Farmers are able to check the scouts' record of insect infestation both before and after an insecticide application. In this way they are able to see clearly the benefits of the proper insecticide applied in the correct amount at the right time.

FIELD TRAINING—As part of their training, prospective insect scouts in Arkansas spend time in the field with extension service personnel. Checking thrip damage in a Crittenden County cotton field are, left to right, Max Wise, Ronald Colner, Bill Lindermon, associate county agent, John Stephens, county agent, and Roy Porter.

High Yield of Cotton Seen for Texas

DALLAS, TEXAS — Texas cotton farmers may set an all-time record for yield-per-acre this year, according to C. B. Spencer, agricultural director of the Texas Cottonseed Crushers Assn.

Cotton leaders expect farmers to break the record this year by exceeding the 325 lb. an acre made back in 1866. Last year's record of 295 lb. an acre had been the highest since the early record was set.

"The 1958 crop is off to a good start," he said. "About a third of the acreage will receive the benefit of irrigation this year. There is enough subsoil moisture to assure a better than average yield under dryland farming conditions."

Farmers are also doing the best job ever of controlling cotton insects, he pointed out. Last year three counties made more than two bales an acre. These were Culberson, Pecos and Reeves, all far west Texas counties that depend altogether upon irrigation.

GRASSHOPPERS

(Continued from page 1)

significant, according to USDA's Agricultural Research Service.

A state-by-state summary of the grasshopper situation in the outbreak area follows:

Colorado: The cooperative rangeland program has been making steady progress. More than 900,000 acres are now organized under federal-state-rancher agreements in a total of 11 counties. About 340,000 acres have been treated.

The work on roadsides, idle lands and wastelands has been organized in several counties, with the federal government participating to the extent of one-third of the cost. The state and county highway departments are cooperating in the highway work.

Kansas: Continuous progress has been made in organization of the roadside, idle lands and wastelands control program. Nineteen counties are participating in the cooperative effort. Many other counties are carrying on grasshopper control work but have requested only technical assistance of the federal government. The State Department of Agriculture and the State Extension Service have had an important part in organizing the program.

About 100,000 acres in nine counties have been treated, including 14,600 miles of roadsides. It is estimated that 25,000 to 35,000 miles of roads will be treated during the course of the program.

Airplane treatment of 1,100 miles of railroad rights-of-way under a federal contract with a private operator was completed June 24. The railroads are paying two-thirds of the cost of this work.

Oklahoma: The roadside, idle land and wasteland treatment program has made excellent progress in Texas County, and it is being organized in Beaver, Cimarron, Harper and Ellis counties. Treatment is under way on 212,000 acres of rangeland in Cimarron and Texas counties under a cooperative program, with the ranchers paying two-thirds of the cost. Nine aircraft are being used on this contract.

Texas: Contracts have been let for the treatment of 850,000 acres of range in Dallam, Sherman, Hartley, Roberts and Gray counties. About 80,000 acres under these contracts have been completed. Twenty-two aircraft are operating on the cooperative range program. Work is under way on an additional 170,000 acres that ranchers are handling independently.

Approximately 35 ground spray units are in operation in 15 northwest counties treating roadsides, idle lands and wastelands to protect cultivated crops. The State Highway Department is applying the insecticide to the primary roads and assuming two-thirds of the cost of operation.

The county governments are participating in the program on the secondary roads and on idle and waste lands totaling about 300,000 acres. Where ground spray equipment is not available, the counties are contracting for small planes to do this work.

New Mexico: A contract was let on June 20 for 110,000 acres in Union County under a cooperative state-federal-rancher agreement.

AIKMAN

(Continued from page 1)

According to the report, prices in Europe fell to about £14 ($39.20 per long ton [2,240 lb.]) f.o.b., but some improvement has been noted.

The report estimates world (outside the USSR) production for agriculture in 1958-59 at 8,710,000 metric tons of pure nitrogen, with agricultural consumption at 7,940,000 metric tons. This compares with world production of 7,960,000 metric tons and consumption of 7,455,000 metric tons in 1957-58.

The report also brings up-to-date USSR figures, which have been released from official sources within that country. These place Soviet production at 750,000 tons for 1957-58, 710,000 tons in 1956-57, 626,000 tons in 1955-56, 556,000 tons in 1954-55, 495,000 tons in 1953-54 and 470,000 tons in 1952-53.

From July 1, 1956 to June 30, 1957 production of Chilean nitrate was reduced owing to strikes and to the poor rate of exchange which producers were obtaining, and profits were negligible, the report stated.

"Since the referendum was approved, more realistic exchange rates have been obtained and for the current year 1957-58 it seems probable that costs will again have been normal, and particularly in the case of Anglo-Lautaro, both production and costs will again be at a favorable level," the report said. "Considerable developments in production are taking place under the solar evaporation process which, apart from increasing the production of nitrate of soda both ordinary and potash, will result in a number of other articles being produced, the profits from which should materially reduce the costs of nitrate of soda and potash nitrate."

Wayne P. Dean

MANAGER NAMED — The appointment of Wayne P. Dean of Columbia, S.C. as agricultural plant food marketing manager of Swift & Co.'s agricultural chemical division has been announced by W. F. Price, general manager. Mr. Dean, 42, is manager of Swift's plant food factory in Columbia. On June 30 he will succeed W. J. Chapin, recently named head of the general feed department. A graduate in agriculture of the University of Florida, Mr. Dean also holds an M.S. degree in entomology. His career began as a field representative at Winter Haven, Fla. in 1940. Following military service he returned to his sales territory, and in 1949 became assistant manager at Winter Haven in charge of insecticide and fungicide sales. He was appointed manager at Columbia, in 1955.

FLORIDA FIELD DAY

JAY, FLA.—The West Florida Experiment Station's annual field day for farmers of the area is scheduled July 10, according to Dr. C. E. Hutton, vice director in charge. Highlights will include recent research studies on date and rate of planting corn, and high fertility and residual fertilization studies on corn, wheat and soybeans. Other topics include varying rates of hydrated lime on soybeans and high rates of agricultural limestone on corn, peanuts and soybeans.

ALBERT J. OLNEY DIES

LEXINGTON, KY.—Albert J. Olney, 70, head of the University of Kentucky department of horticulture since 1930, died here recently.

R. B. Windhorst A. J. Grunzinger

NEW DUTIES—Bemis Bro. Bag Co. has announced the appointment of Alfred J. Grunzinger to the position of production manager with the company's St. Louis bag factory, effective July 1. Richard B. Windhorst has been named to succeed Mr. Grunzinger as sales manager of the St. Louis sales division. Mr. Grunzinger joined Bemis in 1923 as a clerk in the city order department, and was transferred to the sales staff in 1931. In 1952 he was appointed sales manager of the St. Louis sales division. Mr. Windhorst has been with the organization since 1945, starting in Minneapolis in the general sales division. He left the company briefly, and then returned to the Chicago general sales division in 1948.

Timing Important in Control of Lygus Bugs

WASHINGTON — More effective control of lygus bugs, a costly pest to lima-bean growers, is possible by proper timing of insecticide applications, entomologists of the U.S. Department of Agriculture report.

Results obtained in five years of USDA research on lygus-bug control were reported to the Pacific Branch of the Entomological Society of America at its 42nd annual meeting in San Diego, Cal.

M. W. Stone and Francis B. Foley, scientists of USDA's Agricultural Research Service stationed at Whittier, Cal., said that correct timing of insecticidal applications increased yields of dry beans by 200 to 250 lb. per acre.

The average results, they said, showed that a single application of DDT, just after blossoming began (early), or about 2 weeks later when the pods appeared (intermediate), gave the most significant increases in yield. Each of these applications was superior to late application at the time the pods were 1½ to 2 inches long. Early and late applications combined gave yields no better than an early application alone.

The scientists reported that all of the experimental treatments reduced the percentage of pitted beans caused by lygus bugs. The intermediate application and the combined early and late applications were the most effective in reducing this type of damage. The intermediate application was also effective in reducing damage to pods and beans by corn earworms.

Surveys show peak populations of lygus bugs are likely to occur during the first half of August. This indicates the need for applying the insecticide two weeks after blossoming—usually the latter half of July—to prevent damage to small and half-mature pods present on the plants in August.

Lime Sales

WASHINGTON—Sales of agricultural lime during April totaled 30,290 short tons, compared with 30,434 short tons in April, 1957, the Bureau of Mines reports. The sales last April included 23,463 short tons of hydrated lime and 6,827 short tons of quicklime.

NEW APPOINTMENT

STATE COLLEGE, N.M. — Dr. Ernest Ray Jensen, Coffeyville, Kansas, has been appointed assistant professor with the horticulture department, New Mexico A&M College.

Chicago Croplife Office Moves to New Quarters

CHICAGO—Expanding services and the addition of another representative have made necessary a move to larger quarters by the Chicago staff of The Miller Publishing Co., publisher of Croplife. The new offices are located in Room 2832, Board of Trade Bldg., 141 W. Jackson Blvd., Chicago 4, Ill. The former location was Room 2272 in the same building. The new telephone number is HArrison 7-0515.

"Our office facilities had to be enlarged in order to handle efficiently the increased editorial and advertising services now being processed," Don E. Rogers, manager of the Chicago branch office and vice president of The Miller Publishing Co., said Amos W. Standish, formerly with Building Supply News, recently joined Mr. Rogers and Henry S. French, assistant branch manager, in the Chicago office.

Chemical Uptake By Roots to Be Studied

RALEIGH, N.C.—Research into how plant roots take up organic chemicals will get under way following a grant of $23,900 from the National Science Foundation for a three year study at North Carolina State College.

Dr. Robert P. Upchurch of the college's field crops department will direct the study, the purpose of which is to uncover some of the fundamental principles which are involved in the uptake of organic chemicals by plant roots.

"The results of this study, jointly supported by the Foundation and State College," Dr. Paul H. Harvey, head of the field crops department, said, "should help provide a sound basis for the expanded use of weed, insect and plant disease control chemicals by farmers."

OKLAHOMA APPOINTMENTS

STILLWATER, OKLA. — Appointments of Dr. J. R. Gingrich and R. S. Smith to assistant professorships in the Oklahoma State University agronomy department have been announced by Dr. Marlowe Thorne, department head. Dr. Gingrich is a soil physicist, and will conduct research into effects of soil moisture and aeration on plant growth under Oklahoma conditions. Mr. Smith will do soil survey interpretation work under a joint appointment with the U.S. Soil Conservation Service.

Sprinkler Application Of Fertilizer Scheduled

FAYETTEVILLE, ARK.—Farmers can ordinarily irrigate with a sprinkler system and spread water-soluble fertilizer in one operation. That is the way Billy Bryan, associate agricultural engineer, sums up six tests here at the Arkansas Agricultural Experiment Station for distributing fertilizers through sprinkler irrigation systems.

Three nitrogen-source fertilizer materials were distributed evenly over the area wetted by the sprinkler, he reported in Bulletin 598. Each fertilizer flowed through the system with about equal uniformity. He used a complete fertilizer, 13-13-13, and two nitrogen carriers: nitrate of soda (16-0-0) and ammonium nitrate (33⅓-0-0). All were water soluble.

Both auxiliary pump and closed tank systems may be used to inject the fertilizer into solution, Mr. Bryan said. The auxiliary pump system introduced a more uniform concentration of fertilizer over the area, although the closed tank system gave more nearly equal concentration of fertilizer elements in the solution passing through all sprinklers on a lateral line.

Books on Fertilizers And Their Use

FOREST FERTILIZATION
Donald P. White and Albert L. Leaf

A bibliography, with abstracts, on the use of fertilizers and soil amendments in forestry. Useful to those interested in prospects of a plant food market in forest areas, the book resulted from a special two-year study at the college of forestry, Syracuse University, Syracuse, N.Y., under sponsorship of the Nitrogen Division of Allied Chemical & Dye Corp. The book contains 300 pages, 700 references, with abstracts, and covers the period from 1865 through 1956. Includes the use of fertilizers in forest management **$3.00**

SOIL FERTILITY AND FERTILIZERS (1956)
Samuel L. Tisdale and Werner L. Nelson

An advanced college text, for juniors and seniors, following backgrounding course in soils. Covers elements required in plant nutrition, their role in plant growth, and the soil reactions to these nutrients. Several chapters on manufacture, properties and agronomic value of fertilizers and fertilizer materials. Latter part covers soil fertility evaluation and use of fertilizers in sound management program. 430 pages, cloth bound **$7.75**

PLANT REGULATORS IN AGRICULTURE
Dr. Harold B. Tukey

Published September, 1954. A text book giving background material for county agents, farmers, citrus growers, nurserymen, gardeners; providing fundamentals and general principles; covers encouragement of roots by plant regulators, control of flowering and fruit setting, parthenocarpy, abscission, prevention of preharvest fruit drop, delaying foliation and blossoming, maturing and ripening, inhibition of sprouting and weed control. Brings together specialized knowledge of 17 authorities in the field, with two chapters written by Dr. Tukey, head of department of horticulture at Michigan State College. 269 pages **$6.50**

THE CARE AND FEEDING OF GARDEN PLANTS
Published jointly by the American Society for Horticultural Science and the National Plant Food Institute.

An entirely new, one-of-a-kind book, it is designed to acquaint readers with nutritional deficiency symptoms or "hunger signs" of common yard and garden plants including lawn grasses, shrubs, flowers, garden vegetables, and cane and tree fruits. It stresses plant "feeding," or "what makes plants grow." Sixteen of the nation's leading horticultural authorities collaborated in its preparation. Cloth bound, 300 pages of text and illustrations including 37 pages in full color **$3.00**

AUXINS AND PLANT GROWTH
A. Carl Leopold

A 366-page book, complete with bibliography, appendix, and index, discusses the fundamental and applied aspects of growth hormone and synthetic auxin action in plants. These are of interest to all workers in agricultural chemicals—for weed control, flowering control, fruit set, flower or fruit drop and plant propagation. The text is divided into two sections, (1) fundamentals of auxin action, and (2) auxins in agriculture. These cover developmental effects of auxins, the physiological and anatomical effects of their application, the chemical nature of growth regulators, and methods of applying auxins and their persistence in plants and soils. Other subjects covered: rooting, parthenocarpy, flower and fruit thinning, control of pre-harvest fruit drop, flowering, dormancy and storage, herbicides, miscellaneous uses of auxins, and potentials of auxins and auxin research. Published by University of California Press..... **$5.00**

ECONOMIC AND TECHNICAL ANALYSIS OF FERTILIZER INNOVATIONS AND RESOURCE USE
By E. L. Baum, Earl Heady, John Pesek and Clifford Hildreth.

This book is the outgrowth of seminar sessions sponsored by TVA in 1956. Part I—Physical and Economic Aspects of Water Solubility in Fertilizers. Part II—Examination of Liquid Fertilizers and Related Marketing Problem. Part III— Methodological Procedures in the Study of Agronomic and Economic Efficiency in Rate of Application, Nutrient Ratios and Farm Use of Fertilizers. Part IV—Farm Planning Procedures for Optimum Resource Use. Part V—Agricultural Policy Implications of Technological Change. It presents new methodological techniques for more efficient handling of research problems related to fertilizers and provides more meaningful answers to problems of practical application **$4.50**

HUNGER SIGNS IN CROPS—Second Edition
A symposium—published jointly by the American Society of Agronomy and the National Plant Food Institute.

A comprehensive study of nutrient-deficiency symptoms in crops compiled by 19 of the leading authorities in the field. It is being widely used by college professors, research and extension specialists, industrial chemists and agronomists, county agents and teachers of vocational agriculture. Many farmers have found it of particular value in planning their fertilizer programs. Cloth bound, 390 pages, 242 illustrations, including 124 in full color **$4.50**

USING COMMERCIAL FERTILIZER (1952)
Malcolm H. McVickar

Dr. McVickar is chief agronomist of the National Fertilizer Assn. The book deals specifically with commercial fertilizer, how it is produced and how to use it. It is non-technical. It includes chapters on how to measure fertility of soils, secondary and trade-element plant foods. 208 pages, 106 illustrations, cloth bound..... **$3.50**

COMMERCIAL FERTILIZERS, Their Sources and Use—Fifth Edition (1955)
Gilbeart H. Collings

Based upon the author's practical experience as an experiment station agronomist and teacher, and incorporating information on recent developments by agronomists, chemists, engineers and fertilizer manufacturers. Authoritative on problems concerning commercial fertilizers and their use in gaining larger yields. 160 illustrations, 522 pages **$8.50**

APPROVED PRACTICES IN PASTURE MANAGEMENT (1956)
M. H. McVickar, Ph.D.

Outlines clearly and concisely how to have productive pastures to furnish high-quality forage for livestock, economically and efficiently. Written for grassland farmers. Covers the important activities associated with establishment, management and efficient use of pastures as grazing lands or as a source of fine winter feed for livestock. It is as specific as possible for all U.S. pasture areas. Twenty chapters, 256 pages, illustrated **$3.00**

MANURES AND FERTILIZERS

A survey by the Ministry of Agriculture and Fisheries, dealing with soil analysis, inorganic fertilizers, waste organic substances and principles of manuring. In language to give the farmer basic principles of increasing soil fertility by the application of natural organic manures and synthetic inorganic fertilizers. Many important tables on quantitative data **$2.50**

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AN INDUSTRY VICTORY . . .

Decision of New York Judge Paves Way for Future Broad-Scale Pest Control Programs

EVEN though it may be appealed later, the finding of Walter Bruchhausen, judge of U.S. District court, Brooklyn, that the gypsy moth sprayings were "a valid exercise of the state's police power," marks a significant milestone in the hectic up-and-down battle that has been going on for some time now. The fourteen Long Island residents who had asked that the federal government be stopped from applying DDT or other insecticides, found that their arguments failed to stand up in court.

The judge ruled that these plaintiffs had presented no real proof that the DDT spraying had injured anyone's health, or that it had caused "any considerable loss of birds, fish, bees and insects" in the quantities used. What is more, the judge found, the compound did not injure plants, nor was it absorbed by edible plants.

The decision against the plaintiffs is significant, too, in that the anti-pesticide forces had assembled their finest talent for making a case. This first team offensive was led by Robert Cushman Murphy, well-known naturalist who claimed that the spraying had injured plants and rendered vegetables unfit to eat. Mr. Murphy led a procession of nearly fifty witnesses all of whom sought to "prove" that spray projects, such as the one used against gypsy moth, were detrimental to human health as well as being an economic loss.

Judge Bruchhausen listened carefully to the testimony, including that of the defendants, Lloyd E. Butler and Daniel Carey, respectively assistant area supervisor of the plant pest division, USDA, and New York State Commissioner of Agriculture and Markets, then came up with a voluminous 24-page decision which cited "overwhelming evidence" that gypsy moth had been eradicated from the Long Island area. He found further that the plaintiffs had presented little factual evidence to uphold their charges.

"Although the plaintiffs contend that the chemical is deleterious to health and likely to cause future ailments, they presented no evidence that they or anyone else was made ill by the spraying of DDT in the Long Island area," the judge observed. "I hold that the mass spraying has a reasonable relation to the public objective of combating the evil of the gypsy moth and thus is within the police power of the designated officials," he added.

As was suspected by many during the trial which lasted from Feb. 10 to March 4, much of the general protest voiced by residents of the gypsy moth area, was based on personal annoyance rather than on actual damage done. Judge Bruchhausen recognized this and made note of it in his findings. He also declared that there is no danger to health in a spray applied at the rate of one pound to the acre.

Insecticide trade people will recall that some 3,000,000 lb. DDT were applied over the New York, New Jersey and Pennsylvania areas in the spring of 1957. Buffer zones were established to insure containment of the insect, and the job was so well done that future mass sprayings of similar magnitude are not likely to be needed.

Still, should there occur another outbreak of gypsy moth or some other pest which threatens widespread damage, the Brooklyn judge's finding establishes a precedent by which there should be no question about the legality of planning and executing a program to meet the challenge. This removes from the horizon a dark threat of uncertainty about whether, in fact, the federal government or other public agencies have the right to spray large areas for control of a pest which threatens the welfare of all.

Although the gypsy moth seems at the present time to be well wrapped up and exterminated from the area where it was getting such a good start, there are other pests, both actual and potential, which could suddenly become so numerous and widespread that positive steps should be taken either to control or eradicate them from an area. Now, there are legal grounds for taking such action, despite the fears of a few residents that terrible results might accrue.

An important point which Judge Bruchhausen must have taken into consideration is that every precaution possible was taken by the USDA and cooperating state personnel before and during the spraying. There are volumes of data available on the toxicity of DDT and other pesticides at given rates of application, and these were all figured into the planning.

There was little or no guesswork being used on the part of the sprayers, but the plaintiffs in the New York case tried their best to make it appear that the entire operation was one of haphazard planning; that the "dumping" of tons of poison on innocent people and livestock was done without regard to health and safety; and in short, the project was carried out through the calloused maliciousness of irresponsible people whose sole aim was to kill most living things in the area.

We are glad that Judge Bruchhausen showed himself to be an objective jurist who could not be swayed by the noise and clamor of a vocal minority. The pesticide industry stands to gain much from his decision, and so do those people who strained so hard to halt the application of insecticides . . . if they would just stop and think a minute.

Ants . . . Pests or Pets?

AN enterprising toy manufacturer is reported to have worked up a considerable volume of business in selling "ant farms," transparent containers containing sand and a colony of live ants. The sets, distributed over a wide area of the U.S., are assembled in California.

To assure a constant source of supply of ants to put into the plastic cases, the firm has helped establish some 20 persons in the area to act as ant breeders. These people have been provided with glass and wood "breeder" units, a colony of ants consisting of a queen and the thousands of workers required to feed and care for her while she produces eggs.

The ants are purchased from these producers at probably the world's lowest cost per complete livestock unit, 1¢ each, but the farm manufacturers report that some 5 million ants have been bought since last fall, an outlay of $50,000.

We'll bet that mothers of children having such sets are keeping a close watch for ant escapees who may have decided to "go over the wall." Perhaps a new and novel market for ant-control pesticides may be developing here!

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Croplife

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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is $5 for one year ($8 a year outside the U.S.). Single copy price, 25¢.

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Editor

DONALD NETH
Managing Editor

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MEETING MEMOS

July 11—Colorado State University Field Day, Main Station, Ft. Collins, Colo.

July 11—Annual Louisiana State Fertilizer Conference, State Capitol Bldg., Baton Rouge, La.

July 14—Colorado State University Field Day, South Park Mountain Meadow Improvement, Garo, Colo.

Oct. 13—Annual Southeastern Soil Fertility Conference, Atlanta Biltmore Hotel, Atlanta, Ga.

Meeting Memos listed above are being listed in this department this week for the first time.

July 8-10—Pacific Northwest Plant Food Assn., Ninth Annual Regional Fertilizer Conference, Pocatello, Idaho.

July 11-12—Pacific Northwest Section, American Society of Range Management, Summer Meeting, Kamloops, B.C.

July 13-16—American Society of Agronomy, Northeast Branch, Cornell University, Ithaca, N.Y.

July 13-15—Plant Food Institute of Virginia and North Carolina, Summer meeting, Cavalier Hotel, Raleigh, N.C.

July 16-19—Southwest Fertilizer Conference and Grade Hearing, Buccaneer Hotel, Galveston, Texas.

July 24—West Virginia University Agronomy Field Day, Ohio Valley Experiment Station, Point Pleasant, W.Va.

July 27-29—New Mexico Grain and Feed Dealers Assn., Summer Meeting, Hotel Clovis, Clovis, N.M.; Parley Jensen, P.O. Box 616, Albuquerque, N.M., Assistant Secretary.

July 29-30—Annual Fertilizer Industry Conference Sponsored by the Alabama Polytechnic Institute Experiment Station; Black Belt Substation near Marion Junction, Ala. (July 29) and Prattville, Ala. Experiment Field (July 30).

July 30—Kentucky Fertilizer Conference, Greenville, Ky.

Aug. 4—National Joint Committee on Fertilizer Application, Annual Meeting, Purdue University, Lafayette, Ind.

Aug. 4-8—American Society of Agronomy, Annual Meeting, Purdue University, Lafayette, Ind.

Aug. 12-13—Ohio Pesticide Institute, Summer Field Tour, Ohio Agricultural Experiment Station, Wooster, Ohio, J. D. Wilson, Ohio Agricultural Experiment Station, Wooster, Institute Secretary.

Aug. 12-14—Beltsville Cotton Mechanization Conference, Civic Auditorium, Brownsville, Texas; Sponsored by the National Cotton Council.

Aug. 20-24—Canada Fertilizer Assn. (formerly Plant Food Producers of Eastern Canada), Annual Meeting, Manoir Richelieu, Murray Bay, Quebec.

Sept. 4—Grassland Field Day, Rutgers University Dairy Research Farm, Beemerville, N.J.

Oct. 14-15—Western Agricultural Chemicals Assn., Annual Meeting, Villa Hotel, San Mateo, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., Executive Secretary.

Oct. 20—Annual Sales Clinic of Salesmen's Assn. of the American Chemical Industry, Inc., Roosevelt Hotel, New York.

Oct. 20-21—Fertilizer Section, National Safety Council, annual fall meeting, La Salle Hotel, Chicago, Ill.

Oct. 22-24—Pacific Northwest Plant Food Assn., Annual Meeting, Gearhart, Ore., Leon S. Jackson, P.O. Box 4623, Sellwood-Moreland Station, Portland, Ore., secretary.

Oct. 28-29—Northwest Garden Supply Trade Show, Masonic Temple, Portland, Ore.

Oct. 29-31—Fertilizer Industry Round Table, Sheraton Park Hotel, Washington, D.C.

Oct. 29-31—National Agricultural Chemicals Assn., 25th annual meeting, Bon Air Hotel, Augusta, Ga.

Nov. 9-11—California Fertilizer Assn., 35th Annual Convention, Ambassador Hotel, Los Angeles, Sidney H. Bierly, 475 Huntington Drive, San Marino 9, Cal., General Manager.

Nov. 10-11—Agricultural Aviation Research Conference, Milwaukee.

Nov. 18-20—Washington State Weed Conference, Moses Lake, Wash.

Nov. 24-25—Entomological Society of America, Eastern Branch, Annual Meeting, Lord Baltimore Hotel, Baltimore.

Dec. 1-4—Entomological Society of America, Annual Meeting, Hotel Utah, Salt Lake City.

Dec. 3-4—North Central Weed Control Conference, Netherland Hilton Hotel, Cincinnati.

Dec. 3-5—Agricultural Ammonia Institute, Annual Meeting, Morrison Hotel, Chicago, Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

Dec. 9-11—Chemical Specialties Manufacturers Assn., Annual Meeting, Commodore Hotel, New York.

Dec. 17-18—Beltwide Cotton Production Conference, Rice Hotel, Houston, Texas, sponsored by the National Cotton Council.

Jan. 20-22, 1959—California Weed Conference, Santa Barbara, Cal.

CALENDAR FOR 1958-59

JULY

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Douglas Names Grain Sanitation Specialists

Elmer Barr, Jr. Fred A. Stoner

KANSAS CITY—Donald D. Farmer, director of sales and advertising for the Douglas Chemical Co., announces the appointment of two new grain sanitation specialists. Elmer Barr, Jr., will be the Douglas grain sanitation specialist and district manager for Ohio, eastern Michigan and eastern Kentucky. Fred A. Stoner will be the grain sanitation specialist and district manager for Indiana, western Michigan and central Kentucky.

Mr. Barr is a native of Ohio and has had extensive agricultural background as manager of the Ashville Grain Co., Ashville, Ohio for five years, as well as an association with the Scioto Grain and Supply Co., also in Ashville. Mr. Fred Stoner was formerly associated with the Alliance Manufacturing Co. and the Bob Ball Co. as an agricultural sales representative.

Joins Association Staff

NEW YORK—Richard M. Werkheiser has joined the staff of the Chemical Specialties Manufacturers Assn., it has been announced by H. W. Hamilton, managing director and secretary of the association. For the present, his duties are those of general administrative assistant to A. A. Mullikan, assistant secretary.

Mr. Werkheiser is a graduate of St. Paul's School and the University of Pennsylvania, where he received his M.A. degree in 1955.

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Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $11 per column inch.

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E. I. du Pont de Nemours & Co., Inc. ....
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Eastern States Petroleum & Chem. Corp...
Emulsol Chemical Corp. .....
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Flexo Products, Inc. .....
Food Machinery & Chemical Corp. .....
Frontier Chemical Co. .....

Gates Rubber Co. .....
Grace Chemical Co. .....
Grand River Chemical Div. of Deere & Co.

Harshaw Chemical Co. .....
Henderson Mfg. Co. .....
Hercules Powder Co. .....
Highway Equipment Co. .....
Hough, Frank G., Co. 2

International Minerals & Chemical Corp...

Johns-Manville Corp. .....
Jones, Robin, Phosphate Co. .....

Kalo Inoculant Co. .....
Kent, Percy, Bag Co. .....
Kraft Bag Corp. .....

Maas, A. R., Chemical Co. .....
Merck & Co. .....
Meredith Publishing Co. .....
Meyer, Wilson & Geo., & Co. .....
Miller Chem. & Fert. Corp. .....
Miller Publishing Co. 21
Mississippi River Chem. Corp. .....
Monsanto Chemical Co. .....

National Distillers & Chemical Corp. ....
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Penick, S. B., & Co. .....
Pennsalt of Washington Div. of Pennsalt Chemical Corp. .....
Phillips Chemical Co., a subsidiary of Phillips Petroleum Co. .....
Potash Company of America .....

Raymond Bag Co. .....
Roberts Chemicals, Inc. .....

Sackett, A. J., & Sons .....
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Shell Chemical Corp. .....
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Smith-Douglass Co., Inc. .....
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Sohio Chemical Co. .....
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Stewart-Warner Corp. .....
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